An Address
ON
A PROMINENT MOTIVE IN MURDER.

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MR. PRESIDENT AND GENTLEMEN,—In obedience to the Censors of this society the title of the paper I have the honour of reading before you this evening—"On a Prominent Motive in Murder"—is, I fear, a tame one, calculated not to offend the susceptibilities of the most meticulous. Now that I am in possession of the rostrum you will, perhaps, kindly allow me to say that the subject I am bringing to your notice is the "lust for blood" as an incentive to murder, and inasmuch as I confess that the title does savour somewhat of the sensational I have coined a word, *hæmothymia*, which may I hope be allowed to pass muster and to do duty as a fit heading for a somewhat unlovely topic.

THE LUST FOR BLOOD—HÆMOTHYMIA.

I venture to hope that this subject may be deemed worthy of consideration by this society because there figures in many medico-legal cases the statement, which at times becomes an excuse, that with the sight of blood the desire or the impulse which caused the assault is satisfied; that an irresistible craving for blood prompted the agent to attack his selected, or in some instances indiscriminate, victims; and that this lust for blood—which prompts the name of "human tigers" for this class of persons—is to be held as an extenuating circumstance in appraising the culpability of the prisoner. If, as I suppose, one of the objects of this society is the study of the psychological conditions under which civil and criminal offences are committed, the presentation of this phase of emotional compulsion must be of interest if it leads us to a better comprehension of the conditions under which, terrible and repellent as they are, it occurs.

It is an unfortunate thing for a man when the emotional side of his mind leads him to commit crime—the intellectual side when it takes the form of delusion is fairly easily held to mitigate his responsibility; but however acute the mere feeling may be, however strong its compelling force, however morbid in its intensity, such a plea as "affective" or "emotional" insanity rarely, if ever, succeeds (unless to the allowance of extenuating circumstances) in procuring acceptance. And yet feeling and emotion are the chief sources, the well-springs, of action in life! What is the poet or the painter or the musician without feeling or emotion? What secures the upbringing of the infant, with its endless accompaniments of trouble and worry, but the emotional side of mind? The very sources of the fight for life, for food, for progress, for social safety are essentially from the tapping of the emotional or affective promptings. Indeed, will itself is so largely made up of emotional element that it is doubtful if it could exist without it; certainly, any preponderance or diminution in the intensity of the emotional part of the content of any state of willing must seriously affect its validity. If, as experience shows, there arise conditions or cravings which the sight of blood satisfies, we have to enquire into the nature of those conditions, whence they spring to such heights and with such force, and whether their existence is a morbid one.

There has always been an element of mystery about blood. From all time it has been bound up more than any other constituent of the body with life. Our earliest lessons from the Bible have held the flow of blood as the necessary indemnity for the remission of sin, and at the time of the Passover the sight of blood on the door-posts was the sign of protection from the destroying angel. It is the one constituent of the body forbidden by Mosaic law to be used as food. The very smell of it is peculiar, and to many is sickening, while many nursery rhymes and fairy tales are redolent of it, connotative of cruelty and revenge, and illustrating that the shedding of it is the last act of the fulfilment of a desperate purpose. Sir W. Thiselton-Dyer told me an incident which occurred during the time of Sir Mountstuart Grant Duff as Chief Commissioner in India. His Excellency had occasion to visit a native tribe in the outlying parts of Madras. As a visit from the Governor was a rare event much was made of it, and the natives gave him a most enthusiastic reception, in return for which the Governor promised to grant them, within his power, any particular favour desired in commemoration of his visit. The natives said that they had a statue of Agriculture which they wished to pacify inasmuch as their crops had for some time been bad. This pacification could only be effected by offering to the goddess the blood of a human victim, and they asked permission to be allowed, *just for once*, to celebrate the rite. They said that they had found that when the posts in front of the goddess's temple were smeared with blood the harvest was most abundant. *They had tried red sealing-wax on the lintels*, but found that it was of no use—the goddess was not to be taken in! From the very nature of its action, the guillotine had possibly more to do with the virulence and duration of the French Revolution than would have been the case if a bloodless method of execution had been used. The fury of the mob was undoubtedly increased and prolonged by the sight of blood, and when our bloodless executions were done in public the mental tone of the spectators was nothing compared with what was witnessed in our neighbours on similar occasions but with a different method. To those unaccustomed to the flowing of blood there is an emotional tone, induced partly by the sight, partly by the smell, and in part by the idea that life is in danger, and even to those accustomed to it a large hæmorrhage is always a matter involving anxiety and nervousness. I have noticed that surgeons whose operations are attended with much hæmorrhage, such as those on the tongue and throat, find the mental strain more than other classes of operators and sooner retire from their sphere.

Animals seem to associate life not so much with movement as with blood. They obey their tamer however much he may move about, but if he should happen to scratch himself and cause blood to flow, so that they see it and get the odour of it, there is no longer any safety for him. A man in the clutches of a wild animal may have a chance as long as he is perfectly still and has no wound, but the wild beast in quest of food knows that movement in its prospective prey means possible resistance and a potential fight, and therefore it may possibly attack a moving object, but if on the moving object there is blood then an attack becomes a certainty.

Young soldiers in action are said to be unnerved at the sight of blood, and for this reason it is said that the scarlet uniform was used either to conceal the colour of the blood as it flowed or to accustom the men to the colour of it. There is no doubt that the custom of "blooding the hounds" and the inauguration by "blooding" into the clubs of hunting men and women have the same object—viz., to render them familiar with the sight and smell of blood, to baptise them into the corporate body, and by creating a familiarity and a membership to elevate to *an ideal* to be grasped what might otherwise have acted as a forbidding sentiment. I cannot find that in early times savages celebrated this cult of blood in their young and inexperienced men except by public sacrifices, but in the absence of complete history I can quite understand that it would have been done. Modern warfare being more a matter of long range instead of hand-to-hand fighting must have modified the emotional element in that it has made the men accustomed to the idea that they are fighting without being paralysed or excited by the sight of blood—at any rate for some time after action has begun. It would seem that there are two objects in fighting—one to kill and the other merely to injure and incapacitate; hence nothing in the former excites passion so much as does the sight of blood, because it stimulates to fresh exertions in the same direction; whilst in the latter, where the object is merely to injure and not to kill, the sight of blood has a sobering effect, for it frightens the agent and shows that he has gone further than he intended. Where the object is to *kill* the sight of blood may also have a calming effect, because it shows that what was desired has been accomplished and that there is nothing more to be done.

What we want to know is the state of mind which, without external provocation, prompts to those murderous outrages

which from time to time occur (e.g., the Jack the Ripper cases) in which no object can be seen beyond an apparently uncontrollable desire for blood. Here we note that there is probably an *emotional complex* present, not merely the desire for blood, but also an admixture with the love of notoriety, of a wish to frighten the public and of self-satisfaction at finding the prominence attained, the last acting as an incentive to repetition of the process to feed the flame of vanity. Ivan Bloch (p. 51), in talking of the biological and ethnological significance of the colour *red* in the sphere of sexuality, says that the nature of the sadist to "see red" is firmly founded on a physiological basis and merely exhibits an increase of a normal phenomenon. Hence many ingenious prostitutes wear a red chemise. He compares: "Lust, murder, and sadism, where women inflict slight injuries on their love partners for the purpose of sucking blood, which gives them sexual gratification (sexual vampirism)." The element of *cruelty* does not enter into the question in the same way as some may think. Modern writers on social psychology and emotion (Ribot and MacDougall) do not discuss the question of cruelty—they hardly ever mention the word—and yet in generally discussing acts of this class the word "cruelty" is much used—the agents are said to be "cruel" and "senseless." If "cruelty" means the needless infliction of pain (mental or bodily) just for the sake of it, then it does not appear that these people are cruel any more than we should call an animal cruel who kills another for food. The agent may indeed be the reverse of cruel in this sense, for it is not the horror of the torture chamber that he perpetuates and dwells upon, but the satisfaction of his own inordinate desire which he must gratify. A "cruel" man is, etymologically speaking, one who thirsts for blood (*cruor*) and the adjective "crudus" means full of blood; hence raw, uncooked, unfinished, as secondary meanings, but by the majority the real significance of the word is not appreciated.

Let us dive down to the early periods of human life to see whether we can obtain any illumination upon this lust for blood. Animals, especially the carnivora, which have to get their living, seem to be specially attracted by the smell of blood and the sight of it; it makes them furious to be placed under the influence of it (even the herbivora are specially affected by the smell of blood—e.g., witness the terror of cows cooped up near a slaughter-house). The sight of blood has long been associated with the death of the victim, and hence with the opportunity for the appeasing of hunger, and therefore, even if it be supposed to be a connate instinct, there is yet the powerful law of association remaining to make it a feeling, an emotion, a mover of the first rank. Without the feelings or emotions there is no stimulus to either impulsive or voluntary action, and this seems as far as we are at present able to go in the analysis of feeling. We do not know what it is nor how it is originally developed; we can merely note its existence and that there are degrees in its intensity. We must just accept *this*, that the desire for blood is primarily a necessity for the means of living and that it may be the only way to satisfy a certain mental and bodily craving; it denotes the satisfaction of trends or tendencies to violence and destruction which, conscious or unconscious, exist in all men. As Ribot says (quoting Gall), the most violent tendency has its source in normal life. There is an inclination gradually rising from the pleasure of seeing anything killed to the most overpowering desire to kill. It is possible to pass by imperceptible gradations from the extreme case to the normal state in the following order: the pleasure of killing, the overpowering desire to kill, the pleasure of looking on at killing, the pleasure of seeing the blood of animals shed, the pleasure due to the representation of violent and bloodthirsty melodrama, and lastly, the pleasure of reading bloodthirsty novels or hearing accounts of murders, which is purely an affair of the imagination. If there is one psychological law more firmly established than another, both by facts and argument, it is that every intense representation—i.e., idea—of an act tends to realise itself. How is it, he goes on, that artists who feel things violently never pass them into action? Because the law is in them subject not to an exception but to a *deviation* by the creation of a work of art which delivers them from the haunting idea. Morbid art is thus a defence against abnormal tendencies which otherwise would tend to transform themselves into action. Man being a carnivorous animal retains the trend of idea that the blood—in his acts of necessity and amusement—is the main thing—he must always be killing something, and with many the killing is the chief object of life. Hence big battues and other sport. Early men and savages, to whom cooking was unknown, ate the flesh raw and drank the blood of their victims, and there are now many who prefer meat raw or underdone. I remember that some years ago I had to examine the mental condition of one of the survivors of the *Mignonette*, the yacht which was wrecked, when some of the crew were exposed to the greatest hardships of hunger and thirst. They were reduced finally to killing the boy (who was almost dead before his veins were opened), and one of the participators in the carnal feast told me that he never experienced anything more delicious than drinking the blood—no doubt he was in the state to appreciate anything in the form of nutriment; but even the remembrance of his experience came back with a satisfaction which it is difficult to believe would have been so forcible with any other medium. Ribot talks of the emotions of elation and self-display as instincts, just as the desire for blood is primarily an instinct, and without doubt we see this instinct of self-display in animals, birds, and human beings. It may become a passion transcending prudence, as in the various excesses of dress and social functions, but being harmful to no one but the individual we take no notice of it, as we have done away with sumptuary laws. We expect these instincts to be confined within sober limits by the gradual growth of judgment; but when we find that judgment has not developed with a restraining force we are not surprised at the overgrowth of the instincts and at the infractions of the law which necessarily ensue. "Wisdom and blood combating in so tender a body we have ten proofs to one that blood hath the victory," says Leonato in *Much Ado about Nothing*.

Instances of the results of the overpowering mastery of the sexual instincts occurring in people of otherwise good judgment and of great intellectual power, of indulgence carrying them into compromising situations in spite of the knowledge that they are on dangerous ground, are common enough. The divorce court teems with such experiences. Craving does not wait on judgment, but writers on emotion and feeling shirk the definition of this pushing force. Of the various hypotheses perhaps the best is that which supposes craving to be the demand of the organism for something which is necessary for its continuance or its nutrition. This does not help us much if we do not know what the conditions are which call for this ministration of physical or psychic material. But it seems to be about as far as we can go. The difference between a food and a stimulant comes in here. Alcohol is an augmentor of energy but it is not a food. Ink-drinking supplies iron to the anæmic girl. The extraordinary tastes of pregnant women doubtless indicate chemical and nutritional needs, but what is the condition which calls for blood? It is a psychical craving due to a mental state which ordinarily has no force beyond being a sign that what is required for nutrition is in a condition ready for satisfying the craving, and it is a notable instance of the transference from the object to the subjective condition on which the objective rests for its accomplishment. Such transferences are not uncommon, witness how women buy things merely because they are tempted into shops or bazaars; they do not want them, they may have no use for them, but the mere *act of buying* must be satisfied because the idea of acquisition is so intensified that it becomes ideo-motor. A person at a great height throws himself from a platform, not because he *wants* to kill himself, but because the idea of throwing becomes ideo-motor; the man of the ideal trend does badly to keep firearms or poison in his possession because the fact of possession adds to the intensity of the idea, and the idea is very apt without wish or intention to expend itself in ideo-motor action. The paintings of realistic artists, such as Félicien Rops or Fragonard, the horrors of the Wiertz gallery at Brussels, the sensational murder stories of E. A. Poe are the fortunate motor outcome of strong ideas—fortunate for the authors, for the ideas, though offensive to many, are in reality the harmless outpourings of what might have been dangerous trends for their possessors. We shudder and say, "What a morbid mind such and such a person must have had," not recognising that we are gazing at the working out of an idea which might have had a very different ending but for the fortunate direction in which the overmastering idea resolved itself. The influence of the

literature of the penny-dreadful order in arousing ideas of a kindred nature acting as incitements to theft and murder is an every-day experience, and the momentary enthusiasm of pageant or of scenic display is taken advantage of by the cognoscenti to ensnare people in obligations who are afterwards surprised at finding to what they have committed themselves.

The other evening a man near me in the gallery at the moment of the play, *An Englishman's Home*, when the Englishman is led off the stage to be shot, shouted out, "Cheer up, old chap; be a man, it'll soon be over!" If the recruiting sergeant had been near he would have found a ready conscript at the moment! How he would have liked it after his excitement had been dissipated is another question. An emotion once translated into action is impossible to recall: there is no further experience of it until the centres become charged again. Without doubt, much of this excess of feeling is morbid; it ought not in a properly balanced mind to arrive at such an intensity as to bear down restraint, and if it rises to such a pitch as to do more than is necessary for the need of the individual and his social system—i.e., if it shows itself incapable of modification by the means adopted by the environment—then measures must be taken by the predominant Social to check it. But our sociology takes little account of trends and tendencies until it sees what they result in, and this is perhaps inevitable. If we arrested every person who showed emotional excess because in some cases it *might* result in rape, murder, or larceny, we should deprive the world of inventions, of works of art, of philanthropy, and even of brilliant oratory and literature. So we accept the whole budget of possibilities with the risks incident to the admixture of harmless and dangerous tendencies. But in taking the risk we must not under-estimate the forces for evil underlying the volcanic crust of the social system. Perhaps we do not, after all, under-estimate these forces—we are surprised at nothing nowadays. We live in such inflammable elements that we note with cold blood what is done when the blood is hot, knowing all the time that "the brain may devize law for the blood, but a hot temper leaps over a cold decree." When we do get hold of the violator of laws we punish him with rigour, and I am inclined to think that there is less regard than formerly for mental infirmity, though the medical claims for the nature and extent of mental unsoundness, and therefore of lack of real responsibility, are much greater and sounder than they ever were. Doctors know that emotional excitement or exaggerated feeling is a morbid condition, often the prelude to delusional insanity; but whether going on to that or not it is a symptom of degeneration in many instances connected with a bad ancestry, and as such is entitled, if to punishment at all, at any rate to a modified punishment; but what chance would a delinquent have who, on the plea of a morbid desire for blood, claimed mitigation of penalty—and yet such a person might be more dangerously unsound than the man who, through his incoherence and delusions, gets off without any difficulty. The man who has inordinate cravings and dangerous trends or tendencies may complain that society has no right to allow him to go about as a free agent and then to avenge itself upon him when his acknowledged morbid trend forces him to deeds which he is unable to keep from. As a rule, we inflict a money tax on libertinism due to emotional *lâchetés*, the co-respondent is heavily fined, the man who commits an assault under angry or jealous feelings (perhaps mixed up with sexualism in some degree) is fined or perhaps imprisoned, the emotional suffragette is fined or sent to gaol, but the man who sheds blood can only pay for it in kind—that is the one law of the Old Testament which we exact, perhaps because we are ourselves so susceptible to feelings of horror on the mere suggestion of blood-spilling. If, then, to normal persons the idea of blood-spilling is so repugnant, what must be the state of mind of the person who finds his only satisfaction in taking the blood of innocent persons? And yet there are such people, and we allow them to go about in our midst while we calmly await catastrophes! The feeling of curiosity is often the basis from which cruelty springs—inordinate curiosity, I mean. There is something magnetic in all urgent accessions of the horrible, and here it takes very little to see the feeling pass into action of some kind. In the lower orders of society there are more emotion and more display of it than in the upper classes, and this partly because the latter have long been educated to conceal their feelings; there is not the actual stress of life which it is the object of emotion and feeling to alleviate, whereas the urgency of living in the former leads to those acts of violence which are so much more common in it than in other platforms of the social scale. People talk about the apathy and the sobering influence, the calmness, and the dry, intellectual judgment of the middle and upper ranks, it is the absence of *necessité de vivre* which conditions this peaceful state, this agapemone of conflicting interests; but even here the element of the original lust of blood may be seen in the crowding of fair women to see the most dangerous jump in the steeplechase, in their presence at a sensational murder trial, or in their interested and eager contemplation of the writhings of the witness in the box under cross-examination in the Divorce Court. Very curious are the cases where the desire for the sight of blood prompts to suicidal attempts. I had under care a young lady who was suffering from an attack of adolescent insanity, during which she poured a canful of paraffin oil over her head and hands and then fired it with a match. She was badly burned and afterwards was much scarred. What surprised her was that at the time of the act she felt no pain, owing, of course, to the condition of anæsthesia which sometimes occurs in these cases, more especially in the cataleptoid forms. Being anxious to see if her power of sensation had returned she afterwards cut herself seriously in order to ascertain whether the blood flowed and to show that she was really alive.

As we get lower down in the social scale crimes of murder and violence are most frequent; there is plenty of vice and infraction of the law in the higher classes, but it is of a different type, and may be described as more of the intellectual life, forgery, swindling on a large scale, emotional excess of the selfish form. This may be due in part, as our President the learned judge once said here, to excess in drinking (especially of bad liquor) among the lower orders, but another reason is probably to be found in the lower state of evolution and in the degenerative surroundings under which they live, circumstances which naturally reinforce any trend or tendency to the uncontrolled instincts with which early life seems inseparably bound up.

Modern psychology, though it has done much to analyse mental processes, has not been up to now successful in enlightening us as to the real nature of the elementary processes themselves. It seems doubtful if we shall ever be much nearer than we now are towards a real comprehension of them, but we do at any rate know that there are actual facts or conditions, and, helped by pathology, we know that these conditions may be exaggerated or distorted in some whilst in others they never rise to any prominence—may, indeed, be scarcely existent. The law, which may be described as the verdict of the intellectual element of mind, as the declaration of what is the truth with the emotional element filtered out, ignores the validity of the chief side of mind out of which action oftenest arises; hence the lawyer and the physician must come into conflict, unless they come to terms about the primary psychological dictum—viz., that emotion or feeling is the basis of voluntary action, and that, therefore, any morbid alteration in kind or intensity of the former must change the character of the latter.

I have tried to determine whether there has been, with the progress of time, any alteration in this question of hæmothymia, whether the cry of the peace-party of to-day, the appeal for the putting down of armaments, the enthusiasm of vegetarians, the demand for the commutation of death sentences, can be regarded as due to a process of evolution. We may be more slow to anger (experience has taught us the advantage of that); we may be more willing to pay when in older times we should have fought; we may be more careful of life; we may conduct wars on more humanitarian principles, but when once engaged the old emotions seem to come up in all intensity, and on occasion the call for blood overwhelms every other.

The result of all this is that whatever it may mean there is an innate primary feeling with regard to blood—at one time attractive, at another repellent, but in all cases strong. That trends or temperaments foster the one and increase the other; that the instinct is probably connected with the earliest efforts to procure food; that just as the sexual instinct or that of fear may be the direction of a trend and may be so strong as to lead to all kinds of extravagances (as we see daily that they do), so may the

lust of blood be overpowering and lead to murderous acts; that being an emotion, it is probably more compelling than most ideas, and as such should be correctly estimated; that as emotion or feeling is the primary determinant of our efforts to live, it should hold a prominent place in our estimate of responsibility, because any morbid elevation of it renders voluntary inhibition negative and such voluntary power as is caused must be in its own direction. It can only be repressed by eradication of the conditions by which it exists, and when once seen seclusion methods should at once be resorted to without waiting for the acts to which it must of necessity lead.

NOTE ON SOME OF THE THEORIES AS TO THE MODE OF PRODUCTION OF GROCCO'S PARAVERTEBRAL TRIANGLE OF DULNESS.

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THE important paper contributed to THE LANCET of Dec. 5th, 1908, by Dr. Robert D. Keith and Dr. Arthur Keith on the Extension of a Pleural Effusion towards the Sound Side in a Still-born Child corresponding to Grocco's Paravertebral Triangle, had accidentally escaped my notice when it appeared. It deals so largely and with the weight of so much anatomical authority with the question as to the mechanism of that physical sign that it deserves the careful consideration of clinicians and particularly of teachers. In spite of the long interval which has elapsed, the following remarks may be still opportune as they do not appear to have been anticipated by any other published comments on the paper, and as they might yet elicit valuable criticisms from other quarters.

There are Paravertebral Dulnesses of Various Shapes and Origins, including that dulness which belongs to the bones and muscles of the back, and any dulness that may radiate across from a consolidation or a tumour. But there is only one of them which is of any use to us when our purpose is the detection of fluid—the "triangle" precisely as it is described by Grocco. Where opinions differ as to its presence the question arises as to the relative efficiency of the percussions themselves. As the dulness is *not a "dead dulness"* but a partial dulness only, the pleximeter undoubtedly gives an advantage to those trained in its use by yielding a much more definite note of dulness.

Had we no means available for discriminating between any spurious products of percussion and those that are genuine, and between *Grocco's triangle due to fluid* and any other paravertebral dulness not due to fluid, there would be a better excuse for confusions and for resulting doubts such as have recently found expression in THE LANCET, and as late as May 8th, 1909, in the *New York Medical Journal*, and which have delayed the general acceptance and use of a very simple and reliable method. That excuse ceased to exist after the publication in THE LANCET in 1905,[1] of the "crucial test and counter test." If a dulness should disappear from the back on lying on one side and reappear on lying on the other side, it is not likely to be due to the bones and muscles of the back. Neither can it be the product of a pneumonic consolidation or of a tumour, unless we imagine that these can materially alter their relation to the chest wall (of course with due reservation for any pleuritic fluid bathing a pneumonia).

Apart from absolute scepticism as to its existence, the doubt which still prevails as to the cause of the phenomenon has been contributory to the delay. But the question has been thought not unworthy of the attention of anatomists, and among the best results of this prolonged discussion are those excellent contributions by Professor G. Elliot Smith of Cairo,[2] and by Dr. A. and Dr. R. Keith,[3] and the suggestions by Dr. F. W. Forbes-Ross,[4] all of whom recognise that the sign is a clinical one, though the cause be anatomical, and that any satisfactory explanation must rest equally on clinical and on anatomical evidence.

[1] THE LANCET, July 22nd, 1905, p. 216.
[2] THE LANCET, Sept. 28th, 1907, p. 890.
[3] THE LANCET, Dec. 5th, 1908, p. 1699.
[4] THE LANCET, June 29th, 1907, p. 1773.

The Theories as to the Causation of the Triangular Dulness.—1. It may be convenient to attach the name of "*the Pleximetric-Spine Theory*" to that which is referred to by A. and R. Keith in the following terms: "Dr. William Ewart, who was the first in this country to explain the clinical signs of Grocco's triangle, ascribed it to the pleural effusion acting as a mute and preventing the vertebral column from conducting the pulmonary resonance."

Another view which they mention lies in reality outside the scope of the clinical question at issue, as it does not credit the effusion with the causation of the triangular dulness, but regards the latter as entirely physiological. "Dr. F. W. Forbes-Ross regards Grocco's triangle as a physical necessity of the anatomical conformation of the posterior chest wall; Roch and Dufour reach practically the same conclusion. Like Dr. Forbes-Ross they ascribe the triangle of dulness chiefly to the musculature of the back." The pleximetric spine theory is not critically analysed by the Keiths, but it is indirectly discountenanced by their approval of three other theories described in their valuable paper:—

2. *The Direct Fluid Dulness Theory.*—This is the old original theory which assumes a bulging of the water-logged pleural sac into the sound half of the chest sufficient to produce on percussion the paravertebral dulness.

3. *The Pulmonary Collapse Theory* will be presently discussed.

4. *The Posterior Mediastinal Mesentery Theory.*—This is the original and most important feature in their communication. It is set forth in the following words:—

"The posterior mediastinal mesentery was described and figured by one of us in these pages some five years ago. It corresponds to the translucent triangle seen in the corresponding part of the thorax when the patient is examined in a suitable position by the aid of x rays. This mesentery has been overlooked by anatomists owing to the body being hardened and always examined in the supine position, when the heart and mediastinal contents are pressed backwards against the spine. It can be well demonstrated during the course of a post-mortem examination when the sternum and costal cartilages are removed. If the pericardium with its contents be then lifted forwards the posterior mediastinal mesentery will be seen to stretch from the pericardium to the spine and to have a front-to-back extent of from one to two inches. In our opinion Professor Elliot Smith is justified in applying the term pendulum-swing to the contents of the thorax; when a full breath is taken the heart and roots of the lungs can be seen to move forwards and downwards, following the direction taken by the descending diaphragm. To permit that movement the posterior mediastinal mesentery must be slack and long; it is its slackness and extensibility that permit so free and easy an extension of the contents of one pleural cavity towards the side which has the higher negative pressure; the mesentery being triangular in shape, apex above and base below, retains that outline when pressed into the sound side by a collection of fluid on the diseased side, thus giving rise to a triangle of dulness such as is described by Grocco."

The Direct Fluid Dulness Theory is best understood by glancing at their illustration (*loc. cit.*) based upon sections through the chest of a still-born infant in whom a *left pleural effusion* extended into the sound side, just as Professor Elliot Smith's illustration shows encroachment of a right pleural effusion into the left chest (*loc. cit.*)

"It supports those who regard Grocco's paravertebral triangle of dulness as due to a direct extension of the pleural fluid or contents from the diseased towards the sound side. In Fig. A the contents of the thoracic cavity are exposed from behind. The left pleural cavity is distended by a pleural effusion, the left lung being compressed towards its root, and the posterior mediastinal mesentery, formed by the approximated leaflets of the right and left pleuræ between the œsophagus and aorta, bulges towards the right so as to compress the base of the right lung. The extension of the posterior mediastinal mesentery is best seen in the transverse section shown in B, *b*. The heart also is forced towards the right. ..... Were such a chest to be percussed out an area of dulness to the right of the mid-line of the spine and corresponding to Grocco's triangle should be found."

The Pulmonary Collapse Theory seeks some support from the observation made by the present writer and appended to his original communication that an abscess below the diaphragm can give rise to a dull paravertebral triangle (which disappears immediately the abscess is evacuated).

"Dr. Ewart believes that the fluid content of such an abscess acts, like a pleural effusion, as a mute on the spinal column. On theoretical grounds we should expect a subphrenic abscess to produce Grocco's triangle, but in a manner different from that supposed by Dr. Ewart. Recently Dr. W. Pasteur has dealt with "massive collapse" of the base of the lung as a sequence of subphrenic abscess and other abdominal inflammatory states; he ascribes, and we think rightly, the pulmonary collapse to a cessation of action and relaxation of the diaphragm on the diseased side, a reflex inhibition following on the subphrenic inflammation. The dome of the diaphragm on the diseased side is found to be raised upwards; there is a considerable diminution of the pleural space on the diseased side, with a corresponding loss of the elastic traction of the basal part of the lung. On the basal part of the sound side there is the usual negative pressure, with the result that the collapsed basal part of the lung on the diseased side is drawn towards the sound side, giving rise to a triangular area of dulness."

Any criticism of the foregoing views must be confined to the main points. In the matter of theories it may be said with every deference that "safety is *not* in numbers." Three theories should not be required to explain one plain fact. If differing, they suffer mutual defeat; if similar, then their agreement should be more absolute than it is in this case, to fit a quantity so strictly constant as the "triangle."

This constancy is the second consideration of a general order which is to the point. Grocco's triangle was originally introduced to us in terms of angles and of millimetres, its height alone undergoing variation; although the pleural effusions vary extensively in bulk. Subsequently, however, when I discovered in 1905 that it can also be produced by collections below the diaphragm, and in particular by ascites, I was able to point out that the base of the triangle was apt to be *broader in the abdominal cases*. In short, it may be said of all three theories that they agree neither among themselves nor with the mathematical feature of the phenomenon they ought to explain.

Passing now to details, a principle of fundamental importance to clinicians in their study of intra-pleural events is the fact that a lung laterally compressed by fluid retreats into the spinal groove by virtue of the posterior position of the pulmonary root above and of the attachment below of the posterior edge of the lung by means of the ligamentum latum pulmonis. This recession and this attachment have always seemed to me to govern in effusion the persistence of the spinal and vertebral resonance for some distance below the upper level of the fluid, and the production of the S-shaped outline of dulness of Damoiseau, and they must not be lost sight of in the present connexion. In upward compressions from abdominal lifting of the diaphragm the same principle should hold good; and it is not easy to realise how the posterior pulmonary border could possibly vacate its groove.

Another principle is that whatever may happen to the anterior pulmonary border by way of collapse or of enlargement or of encroachment into the other half of the thorax, the pulmonary root and *a fortiori* the posterior border are incapable of any migration across the vertebral column. This is precluded by the attachments of the centrum tendineum to the spine on the one hand, and to the inferior vena cava on the other. The posterior and vertical axis of rotation of the heart which passes through the foramen pro vena cava from the liver up to the superior vena cava and the innominate artery may be stretched in its upper part, and lower down it may sway slightly with the centrum tendineum and with the liver under the stress of powerful pressures, as in Professor Elliot Smith's case. But this lateral displacement can amount only to very little, and the close connexion of the spinal column with the pericardium and the posterior mediastinum, kept up through the vena azygos, raises an impassable barrier between the two spinal grooves, precluding any transference of viscera from the one into the other.

There is, moreover, a new clinical fact which seems to leave little standing ground for any theory dependent upon alleged oscillations of fluids or of viscera across the middle line. I have more recently realised that a Grocco's triangle can be percussed out *on both sides of the spine in bilateral pleural effusions*, as well as in ascites. This is easily demonstrated by the skilful use of Sansom's pleximeter. The significance of this fact from the point of mechanism is obvious. The two triangles could not be produced by reciprocal encroachment by bulgings, but they can be explained as the result of reciprocal percussion waves. A pleximetric conduction would also seem to be the only explanation available for the telling fact that the two triangles are almost always *of uneven height* as the two effusions are rarely equal.

The conclusions may be briefly stated:—

1. Grocco's paravertebral thoracic triangle of dulness, due to fluid free in the pleura, is *rectilinear not curved;* and in other respects also it agrees with the description of it given by Grocco.

2. It is also produced by fluid collections in the abdomen; its base is then *broader* than in pleural cases.

3. In the latter neither its width nor its shape vary appreciably, but only its height; this rises exactly to the level reached by the effusion itself.

4. *In bilateral cases* of pleural effusion a Grocco's triangle can be made out *on both sides*, in spite of the dulnesses due to the two effusions. As the effusions are seldom quite equal two unequal Grocco's triangles are the rule.

5. *In ascites* and analogous abdominal cases the rule is for the two triangles to be equal; they therefore make up together a low but wide equilateral triangle bisected by the spine.

6. The simultaneous occurrence of a right and of a left Grocco's triangle is incompatible with the alleged causation by *pleural bulging* across the vertebral column.

7. The same reasoning applies to the theory that a *pendulum displacement* of the intra-thoracic viscera across the middle line might explain the dulness.

8. Anatomical probabilities are against any possible shifting of a *collapsed pulmonary base* away from its own vertebral groove.

9. The assumption that a Grocco's triangle is produced *directly* by any fluid or other non-resonant substance immediately underlying it is negatived by the circumstance that the general outline of the triangle is always "geometrically" the same and is not contingent upon the innumerable variations in size and in shape which belong to fluid collections or to solidifications.

10. This is an argument in favour of the causation suggested under the name of the *plexim etric spine theory*.

11. The same view is supported by the results of the *crucial test and counter test*, which also afford proof of the genuineness of this clinical sign and of its helpfulness in the diagnosis of pleural and abdominal conditions.

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PANCREATIC GLYCOSURIA TEN YEARS AFTER TYPHOID FEVER.

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ON Sept. 8th, 1908, I was consulted by an American gentleman, who came to me with a letter of introduction from Dr. J. B. Murphy of Chicago. In his letter Dr. Murphy stated that the patient was suffering from diabetes and had been sent to me with the object of determining the condition of his pancreas and clearing up the etiology of the disease. He also informed me that there was a distinct history of cholecystitic infection.

The patient was a well-built, healthy looking man, 51 years of age. He had had no serious illness, except an attack of typhoid fever in 1898. There was no history of syphilis or gastro-intestinal disturbances, nor had he had any symptoms pointing to the presence of gall-stones. Although he smoked a good deal he took little or no alcohol. He had never suffered from thirst or polyphagia. The quantity of urine excreted had not increased. So far as he knew he had not lost flesh, nor had he noticed any diminution of strength. 3 per cent. of sugar had been found in his urine in the course of a routine examination at an American health resort in January, 1908, but on an anti-diabetic diet this had been reduced to about half.

A physical examination revealed nothing abnormal. The patient's tongue was not red or glazed, and his gums and mouth appeared normal. His skin was moist. His heart was not enlarged, the heart sounds were natural, and his arteries were not thickened. His abdomen and body generally were well covered with fat. No abdominal tumour or swelling could be discovered on palpation. The liver dulness was normal and the stomach did not appear to be dilated. Analysis of a specimen of the mixed night and morning urine gave the following results:—

Reaction, acid; specific gravity, 1023; albumin, about 1:5000; sugar, Fehling's solution, reduced at once, phenylhydrazin, crowds of typical phenylglucosazone crystals, insoluble in 33 per cent. sulphuric acid in five minutes. Quantitatively, copper reduction (Bang's method), 2·3 per cent. Polariscope, + 2·2 per cent. Fermentation (Lohenstein's saccharimeter), 1·9 per cent.); acetone, *nil;* aceto-acetic acid, *nil;* indican, a fairly well-marked reaction; bile, *nil;* urobilin, a pathological excess; blood, *nil;* urea, 2·42 per cent.; chlorides, 0·8 per cent.; phosphates, 0·13 per cent.; preformed to conj. sulphates, 8:1. "Critical solution point" (phenol), raised 10° C. Microscopically, many small calcium oxalate crystals, a few squamous and transitional epithelial cells, a few leucocytes, no casts. "Pancreatic" reaction, many typical fine crystals, soluble in 33 per cent. sulphuric acid in 5-10 seconds; melting point, after re-crystallisation, 160° C.

The urine, therefore, contained a fair amount of a dextrorotatory fermentable sugar, with traces of a non-fermentable variety. The results of the "pancreatic" reaction suggested that the glycosuria was probably associated with disease of the pancreas, and the presence of many small calcium

oxalate crystals in the centrifugalised deposit tended to confirm this conclusion. The pathological excess of urobilin pointed to there being a catarrhal condition of the biliary passages, which probably extended to the pancreatic ducts. The abnormal reaction for indican and the disturbed relation of the preformed to the conjugated sulphates suggested that both the pancreatic disease and cholangitis were connected with a catarrhal condition of the upper part of the intestinal tract. The absence of any trace of acetone or aceto-acetic acid showed that there were not the profound tissue changes met with in severe diabetes and rendered it probable that the pancreatic disease was of a slowly advancing type, such as, in my experience, is the common result of cirrhosis of the pancreas secondary to infection of the ducts. Although the specimen contained traces of albumin, the fairly normal critical solution point, the normal percentages of urea and inorganic salts, and the absence of casts or other evidence of renal mischief rendered it unlikely that there was any serious disease of the kidneys, while the presence of leucocytes and transitional epithelium suggested that it was not improbably of bladder origin.

The bowels were stated to be opened regularly every day, and there was neither diarrhœa nor constipation. A sample of the fæces submitted for examination gave the following results:—

Appearance, dark brown, formed, solid mass; reaction, amphoteric; stercobilin, a well-marked reaction; occult blood, *nil*. Microscopically, a little vegetable tissue, many partly digested muscle fibres, some fatty acid and soap crystals, no fat globules;

Organic matter...	86·7%	of the dry weight,	normal	85–89%
Total fat...	16·6%	,, ,,	,,	15–25%
Unsaponified fat...	8·6%	,, ,,	,,	10–15%
Saponified fat	8·0%	,, ,,	,,	10–15%
Organic matter not fat ...	70·1%	,, ,,	,,	60–75%
Inorganic ash	13·8%	,, ,,	,,	10–15%

The only striking variation from the normal was the large amount of partly digested muscle fibre found microscopically, but this was probably to be explained by the highly nitrogenous diet which the patient was taking. There was no marked excess of unabsorbed fat, nor was the relation between the saponified and unsaponified fats disturbed in the way that one might expect in serious disease of the pancreas. This, however, I have found in a considerable number of cases of glycosuria of undoubted pancreatic origin in which I have had the opportunity of examining the stools, and I have come to the conclusion that any marked interference with fat digestion is of serious prognostic significance and indicates that the patient is in the last stages of the disease. The absence of any trace of occult blood was against there being any malignant growth in the course of the gastro-intestinal tract, to which the pancreatic disease might be secondary.

As I have pointed out elsewhere,[1] I have been led to divide cases of pancreatic diabetes into three classes, according to the probable origin of the pancreatic affection:—(1) Those in which the morbid influence has reached the gland by way of the ducts; (2) those secondary to blood diseases or circulatory disturbances; and (3) those in which the diabetes has been induced by destruction of the pancreas by malignant growths. There was no evidence that the case under consideration fell under either the second or third head, while the urinary analysis suggested that it was associated with an infection of the pancreatic ducts and biliary passages.

Bearing in mind the history of typhoid fever, and the now well-recognised tendency of the typhoid bacillus to linger in the gall-bladder and bile-ducts, in some cases, long after the patient has quite recovered from the disease, it seemed to me possible that I had to do with a case of typhoidal pancreatitis going on to glycosuria, and that a bacteriological analysis of the fæces might throw further light on the condition. A portion of the fæcal material was taken with a sterile knife from the centre of the mass sent for examination, emulsified in sterile normal saline solution, plated on Drigalski and Conradi's medium, and incubated at 37° C. On being examined 24 hours later one of the six plates that had been inoculated showed two small, blue, finely granular colonies, with raised centres and filmy edges, suggesting bacillus typhosus. Sub-cultures were made from these on to agar-agar slopes and incubated at 37° C. for 24 hours; they then showed a thin, bluish-white, translucent film, that had not spread far from the needle track. Hanging-drop preparations showed actively motile rod-shaped bacilli. The bacilli did not stain by Gram's method, and cover-glass preparations stained by Van Ermengen's method showed that they were richly flagellate. Glucose-gelatine shake cultures showed no gas formation in 48 hours. Lactose litmus broth was not rendered acid and showed no gas formation. Litmus-milk cultures were not coagulated, nor was there any acid formation in 48 hours. Neutral red broth became turbid, but there was no film formation or colour change. Peptone salt cultures incubated at 37° C. for 48 hours gave no indol reaction. An emulsion of the bacilli in normal saline solution, prepared from a 24 hours agar culture, gave a similar reaction with a typhoid serum to a laboratory culture of bacillus typhosus. The fæces, therefore, contained a small number of bacilli having the appearance and characters of bacillus typhosus; a result which tended to confirm my surmise as to the probable origin of the disease.

Pancreatitis is not a common sequel of typhoid fever, and as yet there has been no reported instance in which glycosuria has developed as a result of typhoidal infection of the pancreas. The interval of ten years that had elapsed in this case between the original infection and the discovery of sugar in the urine, at first sight, made it a little difficult to believe that there could be any etiological relation between the two, but as the bacteriological examination of the stools showed that typhoid bacilli were still present, and there was evidence pointing to a focus of infection in the biliary passages and pancreatic ducts, it was not too much to assume that such a relation existed, and that the glycosuria was the direct outcome of slowly advancing changes in the pancreas set up by the persistent infection. Contrary to what has been generally taught, I have found that pancreatic diabetes is usually a mild and slowly advancing disease, often unattended by any marked symptoms for many years,[2] so that the absence of any physical signs and the latent character of the disease in this case did not surprise me but rather tended to confirm my view as to the cause of the glycosuria.

In the treatment of pancreatic diabetes it is essential to first determine the cause of the condition of the pancreas and endeavour so far as possible to control it. As it was highly probable that in this case the primary etiological factor was an infection of the pancreatic ducts and biliary system with typhoid bacilli advantage was taken of the results of the experiments by S. J. Crowe,[3] in which it was shown that hexamethylenetetramine (urotropine) given by the mouth to dogs is excreted in the bile and pancreatic juice in quantity and speedily sterilises the ducts that have been artificially infected with typhoid bacilli. Ten grains of this drug, with ten grains of sodium salicylate, which is also excreted in the bile and pancreatic juice, were therefore ordered to be taken three times a day in two ounces of water for three weeks, when it was suggested that the fæces and urine should be again examined. The second indication for treatment is to discover the patient's tolerance and powers of digestion for the various forms of sugar (particularly levulose and dextrose), starch, fat, and proteid, so that a diet may be arranged which, while it throws a minimum amount of work upon the pancreas and combats the glycosuria, may yet supply a sufficient quantity of nourishment to keep the patient in good condition. The only really satisfactory way of arriving at such a diet is to have the patient under observation in a nursing home or hospital for a short time so that the food may be accurately prescribed in weighed quantities and the effects of variations, with and without the addition of preparations of pancreas, can be determined by regular quantitative analyses of the urine and fæces. Such a procedure also has the advantage of educating the patient to a new mode of life and placing him in a much better position to take care of himself subsequently.

As this patient was obliged to return to America immediately after I had seen him I was only able to give him general directions as to his diet and mode of life, based upon my experience of similar cases, and suggest that he should consult his medical adviser in Chicago and get him to work out a diet chart suitable to his needs.

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[1] Surgery, Gynecology, and Obstetrics, January, 1908, p. 22.

[2] The Pancreas, its Surgery and Pathology, by Mayo Robson and Cammidge, pp. 269 and 438.

[3] Johns Hopkins Hospital Bulletin, April, 1908, p. 109.

THE RELATION OF ACIDOSIS TO THE CARBON DIOXIDE OF THE BLOOD IN DIABETIC COMA.

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Dr. Pavy, in his lectures on the Pathology and Treatment of Diabetes Mellitus, criticised at some length, and adversely, the conclusions we had drawn from our observations on diabetic coma. He has brought forward no new facts and does not deny the accuracy of our observations, but disagrees with the view to which a consideration of the experiments made by ourselves and other workers has led us. The facts that are not in dispute may be briefly summarised as follows. Directly coma sets in the patient shows a well-marked hyperpnœa. The "alkalinity" of the blood—that is, its power of combining with acids—is reduced, and the quantity of carbon dioxide in the patient's blood is materially diminished. If sufficient alkali such as sodium bicarbonate is given by the mouth or is injected into a vein the "alkalinity" of the blood and its carbon-dioxide content are increased, and the symptoms of coma may disappear, at least temporarily. When coma is imminent the patient's appetite becomes extremely poor, and during coma the metabolism of the body, as judged by the output of dextrose, nitrogen, and carbon dioxide, is greatly decreased.

The interpretation of these fundamental facts on which Dr. Pavy insists is that which has been given by the majority of observers ever since the classical experiments of Walter on the poisoning of animals by acids. According to this view, the prolonged acidosis of diabetes reduces the amount of base which is available in the blood and tissue fluids for combination with carbon dioxide; the blood therefore contains less carbon dioxide, and being unable to transport as much as should be removed from the tissues carbon dioxide begins to accumulate in them. In the case of the respiratory centre carbon dioxide is its normal stimulus, and, therefore, the centre is, at first, stimulated to greater activity. The accumulation, however, of carbon dioxide leads to a cessation of its production; and, as Dr. Pavy says, "death takes place when the non-removal has attained a sufficient height to reduce the occurrence of activity to a point which is no longer consistent with the continuance of life."

It is possible to draw from this view certain deductions which can be tested experimentally.

In the first place, so long as the body is alive it will continue to produce carbon dioxide. Whenever the blood is unable to remove it as fast as it is produced, carbon dioxide must accumulate in the tissues, and if it accumulates then its tension in the tissues must be raised; both of these deductions are apparently admitted by Dr. Pavy. Unfortunately, there is no method of estimating directly the carbon dioxide tension in the tissues; but it is generally assumed that the tension of carbon dioxide in the renal cells would not be raised without that in the urine being correspondingly increased. We have shown that the tension of carbon dioxide in the urine in diabetic coma is not raised.

In the second place, if the "alkalinity" of the blood begins to fall, and if carbon dioxide begins to accumulate at an increased tension in the tissues, the blood in the capillaries must be exposed to an increased tension of carbon dioxide. And although the reduced "alkalinity" of the blood might prevent its taking up a normal quantity of carbon dioxide, nevertheless such gas as the blood did take up would be under an increased tension. The tension of the carbon dioxide in the blood can be either estimated directly or deduced from an analysis of the alveolar air. By the former method we have found that it is at any rate not increased, and by the latter that it is, as a matter of fact, diminished even to a fifth of its normal value, and that this decrease is greatest during coma, but is obvious for days both before and after the coma.

In the third place, Dr. Pavy points out that if an alkali is injected into the blood the symptoms of coma cease temporarily; and this he explains by saying that the alkali has increased the power of the blood to combine with carbon dioxide. If this explanation of the good effect of alkali were true, then, since the blood in the capillaries would be exposed to carbon dioxide in quantities greater than it is capable of taking up, and at a tension above the normal, the venous blood, in addition to containing carbon dioxide at a tension above the normal, should be saturated with carbon dioxide for that abnormal tension. We have shown by direct experiment not only that the tension is not raised but that the blood is not saturated even for a tension of carbon dioxide below the normal. Further, if the arm of a patient is bandaged for a sufficiently long time—such, for instance, as two minutes—before the blood is drawn, the carbon-dioxide content of the blood can be raised even up to the normal. In fact, the blood in coma and the precomatose state can combine with very much more carbon dioxide than it actually contains, as will be seen by reference to our determinations.

These observations render untenable the view which is still advocated by Dr. Pavy, and which we ourselves held until we began to work at the subject. This view is based upon the assumption that the decrease of carbon dioxide in the blood is primarily due to the inability of the blood to combine with more carbon dioxide than it is found to contain. This we have shown to be untrue. Some other explanation of the fundamental facts of diabetic coma is necessary, and this we have already attempted to give.

Blood is both alkaline and acid in the sense that it can combine with acids and alkalies. Physico-chemical investigations upon the relative concentrations of acid and basic ions in blood show that in health its reaction is always roughly neutral, approaching that of distilled water. Strictly speaking, the reaction of blood is alkaline to such a slight degree that it may be referred to as being neutral. The reaction of lymph, tissue-fluids, and protoplasm is presumed to be the same as that of the blood. It is probable that the slightest disturbance of this chemical neutrality affects the metabolic activity of protoplasm, and that but a very little upset of the neutrality towards the acid side is incompatible with life. During metabolism carbon dioxide and other acids are continuously produced. In the case of distilled water, the least addition of carbon dioxide or other acid destroys its neutral reaction, but in the case of blood and protoplasm, owing to their carbonates, phosphates, and proteins, considerable quantities of carbon dioxide and other weak acids can be added without altering their reaction and destroying their neutrality. This power of the blood and protoplasm to combine with acids without change of chemical reaction has been called by B. Moore "reactivity" to acids.

During the prolonged and severe acidosis of diabetes the bases become combined with abnormal acids, and are no longer available to combine with the normal acid products of metabolism; hence the range of "reactivity" to acids of the blood and protoplasm is diminished. On this account during severe acidosis the neutrality of the body would be imperilled by relatively smaller doses of its own metabolic products. The cells would be less capable of withstanding the acid properties of their metabolites and would become more sensitive to the physiological action of all acid substances. In the terminal stages of acidosis the quantity and tension of carbon dioxide in the blood are progressively reduced, not, as we have shown, because the blood cannot take up more carbon dioxide than it is found to contain, but because the rising concentration of acid ions in the blood and protoplasm progressively affects the activities of cells. It has been shown by many observers that the quantity of carbon dioxide in blood under comparable conditions of experiment runs parallel with and may be taken practically as a measure of the power of the blood to neutralise acids. As the power of neutralising acid substances manufactured during metabolism progressively falls tissue activity correspondingly decreases, and less carbon dioxide and other acid substances are produced. Also, the respiratory centre is stimulated to greater activity and the hyperpnœa pumps carbon dioxide out of the blood. We have shown that the diminution of carbon dioxide in the blood is present for days before coma begins and lasts for days after coma has passed off. During coma this change is associated with a great increase of the total pulmonary ventilation and a great fall of the carbon dioxide in the

alveolar air. We have suggested that the extreme diminution of the carbon dioxide in the blood in coma is in part due to the rapid removal of carbon dioxide by the hyperpnœa, an explanation which Dr. Pavy accepts. Before coma begins and after it has passed off there is still present a marked fall of carbon dioxide in the blood and alveolar air, but it is less in degree than in coma. Further, it may be present when the total pulmonary ventilation is low and cannot therefore be due to an excessive pumping of carbon dioxide out of the body. When such a patient is made to hold his breath, he is not able to stop breathing sufficiently long to raise the percentage of carbon dioxide in his alveolar air to the normal—that is, his respiratory centre owing to the acidosis reacts more readily to carbon dioxide. If he is given oxygen to breathe containing a percentage of carbon dioxide 2·5 per cent. greater than that in his alveolar air, he absorbs the carbon dioxide from the mixture into his blood. We conclude, therefore, that the low percentage of carbon dioxide in the patient's blood and alveolar air is due not to his blood being unable to take up more than it was found to contain, but to a diminished production of carbon dioxide by his tissues and to an increased sensitiveness of his respiratory centre to carbon dioxide.

We have, therefore, shown that in the precomatose and comatose states of diabetes the blood can take up more carbon dioxide than it contains and that there is not an accumulation of carbon dioxide in the tissues. Failing any other explanation, we conclude that the diminution of carbon dioxide in the blood is caused by a decreased production and by the hyperpnœa when present, and that both are alike caused by the acidosis. It is necessary to explain the onset of the hyperpnœa. Haldane and Priestley and others have shown that in health carbon dioxide is the chief stimulus to the respiratory centre. In diabetic coma, hyperpnœa begins and continues although the quantity and tension of carbon dioxide in the blood are low and there is no accumulation of carbon dioxide in the tissues. At first sight it is not obvious how in this case carbon dioxide could be an effective stimulus to the centre. If carbon dioxide could affect the centre only in virtue of a specific chemical action it could not be the stimulus in coma. We have shown that in diabetic coma the respiratory centre is not stimulated to greater activity, as it is in health, by a slight increase of carbon dioxide in the blood. A patient in coma was given air to breathe containing 2·6 per cent. more carbon dioxide than was in his alveolar air and the hyperpnœa was not increased. The same patient, three days' later, when he was conscious and his hyperpnœa had disappeared, was again given air to breathe containing 2·6 per cent. more carbon dioxide than was in his alveolar air, and his hyperpnœa returned at once. Carbon dioxide is also an acid substance, and although it may be the principal, it is by no means the only, acid substance produced even in normal metabolism, much less in severe diabetes. We therefore put forward the view that the effective stimulus to the respiratory centre in coma was the increasing concentration of unneutralised acid substances. Our view was expressed in these sentences: "It is suggested that the following process is taking place in the nerve cells of the medulla. The decreased 'reactivity' of the protoplasm of the cells due to the prolonged acidosis renders their reaction more easily disturbed by, and therefore makes them more sensitive to, the stimulating influence of any acid body, including carbon dioxide and other acids produced during metabolism." When criticising this view Dr. Pavy quotes against us the work of Haldane and Priestley, which indicates that in health the activity of the respiratory centre varies directly with the tension of carbon dioxide in the blood. Dr. Pavy therefore calls our explanation of the hyperpnœa in diabetic coma "vague, unsubstantiated, and extraneous." When Dr. Pavy wrote this criticism he was apparently unaware that Haldane, like other observers, had already maintained that carbon dioxide is not the only substance which stimulates the respiratory centre, and that in order to explain the regulation of respiration it is necessary to believe that even in health acid bodies other than carbon dioxide do stimulate the centre. This view was put forward originally by Pflüger, Geppert, and Zuntz, and has been amply confirmed by the recent work of Haldane, Pembrey, and others. In fact, our view of the cause of the hyperpnœa in coma is in strict accord with what is known of the regulation of respiration in health, and with the changes which take place in the body in severe diabetes. Similar changes will be taking place in all the other cells of the body, and we imagine that as the acidosis increases the metabolic activity of the tissues is thereby slowly and progressively diminished until consciousness, and finally life, is no longer possible.

Dr. Pavy in his lectures reaches several conclusions in regard to diabetes in general from which we strongly dissent. But we defer a consideration of the subject until the publication of our observations on diabetic patients, when we propose to raise the points in question.

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ON THE OPERATION OF CARDIOLYSIS: ILLUSTRATED BY A CASE.[1]

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THE operation of cardiolysis was first suggested in 1902 by Brauer and put in practice by Petersen—two names which to-day are associated with another and much more important advance in the surgery of the chest. The name cardiolysis is perhaps a little misleading, as it is at any rate more impressive than the surgically simple procedure to which it is given. It was pointed out by Brauer that in certain cases of adherent pericardium where the heart is embarrassed by fixation to the surrounding parts, a considerable amount of this overloading of the heart's action could be got rid of by rendering the præcordial part of the chest wall more flexible than normal by removing its bony and cartilaginous framework. No extensive separation of adhesions was suggested, and it is obvious that under the circumstances in which the operation has to be done such procedure would be very dangerous. In the first place the circulatory conditions are very unfavourable for prolonged general anæsthesia, while the risk of tearing the left pleura or even the heart wall would seem to be very great. The suggestion of Brauer was therefore *prima facie* an excellent one, and it obtained immediate practical justification in the operations done on his cases. The operation was extremely simple and short and the results were encouraging. Nevertheless, it seems to have been very little done. A review of the subject published in August, 1908, by Ernst Venus[2] gives a total of 17 cases, three of them being Brauer's. The article contains a summary of all the cases and seems to be founded on a very complete study of the literature. There is no death recorded as the consequence of the operation, and the results appear on the whole to be very good.

In regard to the indications for operation there is a fairly general agreement amongst the various authors that those cases only are suitable in which the heart has shown some capacity for recovery under treatment by rest in bed. Clearly, if relief of the overloading of the heart is to be obtained by mobilisation of the præcordium, the capacity of the heart to recover must be demonstrable when the overloading is relieved by rest. It would seem then that the most suitable cases are those in which the heart is just inadequate for active life.

In all the published cases general anæsthesia seems to have been used, on the whole without much trouble. The operation need not last more than a few minutes and no very profound degree of anæsthesia is necessary, so that if the patient has been kept at rest for some time previously there

[1] A paper read before the Clinical Section of the Royal Society of Medicine on May 14th, 1909.

[2] Centralblatt für die Grenzgebiete, Band xi., No. 14.

seems no great objection to the use of chloroform. If it were necessary, however, to do the operation at a time when the heart was in an unsatisfactory condition there can be little doubt that a local anæsthetic should be preferred. As is well known, the chest wall can be very satisfactorily infiltrated with eucaine and adrenalin, and one has been able, for example, to open the pericardium very freely under it in a child with purulent pericarditis without causing pain.

The technical details of the operation are very simple. A horseshoe-shaped flap should be marked out having its base above at the third rib and its apex at the seventh. The inner edge should be over the sternum and the outer in the region of the nipple line. The flap is turned up with the pectoralis and all the structures external to the ribs. The fourth and fifth ribs are those most commonly excised, but the extent of the rib resection will, of course, depend on what is found. A length of at least 3 or 4 inches of combined rib and cartilage must be removed. The third, the sixth, and even the seventh rib must also be dealt with if it appears necessary, and even the left edge of the sternum has been excised when the heart was obviously fixed to it.

There has been but one subject of disagreement in the matter of technique, and that is the question of the removal of the costal periosteum. Küttner, Danielsen, Leukenbach, and von Beck all insist on the importance of removing the whole periosteum of the resected ribs lest the mobilised part of the chest wall become rigid again. König, however, points out that this is extremely difficult to do, and has, in addition to the general disadvantage of prolonging the operation under circumstances where saving of time is very important, the special disadvantage that there is considerable risk of a wound being made in the left pleura. The latter, as is now well known, comes inwards normally as far as the left edge of the sternum and is by no means necessarily obliterated in these cases. He recommends, therefore, that the anterior periosteum only should be removed. That this is the proper course to follow and is not likely to lead to re-ossification is shown by a number of cases in which the præcordium has remained flexible for a long period, and especially by a case of König's, in which, two and a half years after the operation, the patient having died from general tuberculosis, a necropsy was made. It was shown that practically no ossification had occurred. The possibility of leaving the periosteum without damaging the usefulness of the treatment makes the operation still more simple and removes the only serious risk it could be supposed to have.

In the case reported at the end of this paper the fourth and fifth ribs were removed for a length of about 4 inches in front of the heart, the periosteum being left behind. The latter was obviously adherent to the front of the pericardium and pleura, and the extent to which it was drawn in and out by the tumultuously beating heart gave one a very clear idea as to how much the cardiac movements must have been hampered by the rigid chest wall.

So far as the general condition of our patient was concerned, he appeared to be a favourable case. He improved greatly with complete rest, but was quite unable to cope with exertion of the most ordinary kind. His general health and development were good, and his disposition was cheerful. There was no valvular lesion, and there were striking indications of mechanical embarrassment. Nevertheless, we felt then, as we feel now, that it is in reality a very difficult matter to gauge the condition of the myocardium. His improvement has been slow and we do not bring him forward as an example of a complete cure, far from it, but he is undoubtedly in a much better condition than he was, and we hope that with continued care he has not yet reached the limit of his progress. We would emphasise in particular the great improvement in the force and volume of his pulse and the diminution in the size of the spleen and liver and the degree of dropsy. On the other hand, it must be pointed out that the cantering cardiac rhythm is still present and the action irritable, as it is in some cases of "soldier's heart." We believe that the choice of suitable cases is not easy, and would in particular look with suspicion upon cases of multiple serositis in which there may be, so far as the heart is concerned, indication for this operation, but which from their tendency to show exacerbations and to spread from serous membrane to serous membrane, would probably not be favourably influenced by surgical interference.

The patient, a male, aged 16 years, was first admitted to University College Hospital on August 16th, 1908, and remained until Sept. 8th, under the care of Sir Thomas Barlow. He came to the hospital complaining of œdema of the legs and swelling of the face in the morning, which had come on gradually during the preceding three months and had steadily grown worse, until he was compelled to abandon his occupation. The only point in his previous history that appeared to throw any light on the causation was a somewhat vague account of pulmonary tuberculosis two years previously.

On admission he was well developed and healthy-looking, except for some cyanosis. The evening temperature usually rose to 99° F. The whole interest of his case centred on the circulatory system. The pulse, 88, was of very low tension and small calibre, though regular. The pulsus paradoxus was present. The veins in the neck were very full and pulsated visibly. The heart showed a wide impulse, extending on the left side from the third to the sixth intercostal spaces. Change of posture made no alteration in the position of the impulse. There was great systolic retraction all over this area with a powerful left ventricle beat. On palpation systolic and diastolic shocks were felt. On auscultation there was a triple rhythm; the first sound was short, but no murmur of any kind was audible. Sir Thomas Barlow pointed out that the cardiac sounds were muffled below the level of the fourth costal cartilage on the left side. Both lungs showed some congestion at the bases posteriorly. The liver extended almost two fingers' breadth below the right costal margin, was tender, and unduly hard. The spleen extended two fingers' breadth below the left costal margin. There was marked œdema of both lower extremities, extending up to the thighs. The urine, of specific gravity 1015, was free from albumin and blood.

Sir Thomas Barlow, in a special note, expressed his opinion that these symptoms pointed to an adherent pericardium with mediastinitis, left pleurisy, and perihepatitis. There was great improvement after rest, and the œdema entirely disappeared in three weeks. The patient was readmitted under Dr. Poynton, acting for Dr. S. Martin, on Sept. 21st, with the history that on his leaving the hospital all the symptoms at once returned. This time his condition was obviously worse, although he had not done any active work. His pulse was more rapid (90–100), the œdema had reappeared, and there was some fluid in the abdomen. The face was cyanosed and engorged and the jugulars very full. Breathlessness and palpitation were now complained of. The cardiac condition showed all the phenomena noted above, and the triple rhythm and small, low-tension pulse were extremely well marked. The liver was larger, reaching almost to the umbilicus, and the spleen about the same size. There was no albuminuria.

It was evident on investigation that the rest in bed rapidly got rid of the œdema, but on the least exertion it reappeared and breathlessness was at once complained of. A walk up and down the ward was sufficient to cause symptoms in these circumstances, and in face of the physical signs it seemed possible that the operation of cardiolysis would be beneficial. The great difficulty in the decision was that of excluding a considerable myocarditis, and with regard to this the most encouraging point was the rapid improvement that occurred when strict rest was enjoined. He was accordingly transferred to Mr. Trotter's care.

The operation was done by Mr. Trotter on Oct. 5th. A semicircular flap was marked out in the præcordial region and was reflected upwards. It included all the structures anterior to the ribs. The fourth and fifth ribs were those which seemed to move most with the movements of the heart, and a length (between 3 inches and 4 inches) of both was removed, the periosteum being left behind. The pericardium was found much thickened and adherent to the chest wall over the region exposed. After removal of the ribs the structures over the heart accommodated themselves far more easily to the cardiac movements. The flap was replaced and the wound completely closed.

The after-treatment of the case has required close attention. It seemed at first, in spite of the favourable result of the operation, as if the cardiac muscle was more at fault than was thought, and that after all we were possibly dealing with a cardiac fibrosis. The patient's mother brought alarmist accounts of him after his departure from the hospital, which led us to believe he was *in extremis* and enabled us to readmit him for a long period into the hospital. On his return it was apparent that, far from being worse, his condition showed distinct improvement. He remained on his third admission two months in the hospital, of which about five weeks were spent in bed. He was then allowed to get up and lastly to walk a little. In January he could sit up for six to eight hours, with his legs hanging down, without getting any, or very slight, œdema of the ankles. The liver was then only one finger's breadth below the costal margin and the spleen one and a half fingers' breadth.

At the present time we believe that the operation has been justified by the result even if the improvement goes no further; for the patient can now go for a walk extending over half an hour, and in the evening there is only slight pitting over the ankles. He looks more healthy and is much less breathless. His pulse has more power and is not so small in size. The size of the heart is somewhat diminished; the liver, though easily felt and harder than normal, is decidedly smaller, and the spleen scarcely palpable. The veins in the neck are greatly reduced in size. There is still a cantering rhythm. This improvement has been very gradual and slow and we believe has been materially assisted by the continuous use of small, repeated doses of digitalis (ℳ v. of the tincture) since November. No exercise of any sort except massage was permitted for three months after the operation, and since then it has been graduated. A month ago he was not quite so well. There had been a slight increase in the œdema and a sensation of fatigue on slight exertion, and as a consequence of this more rest was ordered, and improvement has followed this precaution.

ROYAL INSTITUTE OF PUBLIC HEALTH.—The Council has awarded the Harben gold medal for eminent services to the public health, which it is empowered to do triennially, to his Excellency Professor E. von Behring, M.D., Marburg, Germany, and has appointed Brevet-Lieutenant-Colonel W. B. Leishman, M.B., R.A.M.C., Professor of Pathology, Royal Army Medical College, the Harben lecturer for the year 1910, and Professor Angelo Celli, M.D., Rome, the Harben lecturer for the year 1911. As already announced, the Harben lectures for 1909 will be delivered by Professor R. Pfeiffer, M.D., Breslau, in the lecture room of the institute on Monday, June 21st, Wednesday, June 23rd, and Friday, June 25th, at 6 P.M.

PROPOSED INTERNATIONAL STANDARD FOR THE PHYSIOLOGICAL ASSAY OF THE HEART TONICS OF THE DIGITALIS SERIES.[1]

BY E. M. HOUGHTON, M.D. MICH. UNIV.

IT is a truism that therapeutic accuracy depends largely upon the uniform activity of the medicinal products at the disposal of the prescriber. Laboratory workers of the last quarter of a century have done much to point out the fallacies of empiricism and to devise ways and means for placing the practice of medicine on a more scientific basis. Much credit is due to the chemist for the development of methods of assay whereby the identity and purity of many of the most important medicinal substances may be determined, but it is becoming more and more clearly recognised that there are a number of much used drugs which are not amenable to chemical assay. The heart tonics of the digitalis group stand out conspicuously on account of their chemical properties, toxicity, and therapeutic importance as the chief representative of this class.

To Schmiedeberg, Fraser, Kiliani, and many other workers we are indebted for our knowledge of the chemistry of this group. It is not necessary to point out the many discrepancies that appear in the results of these workers, but owing to the variations in the properties of the crude drug as it appears on the market and the ease with which chemical decomposition takes place, it is impossible to reconcile these views and to accept them as final.

"We are not generally accustomed to think of the heart tonics as being the most poisonous remedies employed in therapeutics, yet it is true. According to some of the best authorities, the maximum dose of extract of digitalis is about one-half as great as the maximum dose of extract of belladonna, while strophanthin, the active principle of strophanthus, is three times as poisonous as atropine, ten times as poisonous as strychnine, and 12 times as poisonous as absolute hydrocyanic acid. It would be considered dangerous pharmaceutical practice to allow preparations containing atropine, strychnine, or hydrocyanic acid to be sold, without first being subjected to careful chemical assay and standardisation. The United States and other pharmacopœias give elaborate methods for the exact quantitative determination of these constituents; while, owing to the fact that the contained active principles of the heart tonics are glucosides, so easily decomposed by chemical manipulation that an assay cannot be made, no directions whatever are given for the determination of the physiologically active properties of the galenical preparations and the tests for the purity of the respective glucosides are of little value. Crude digitalis, strophanthus, &c., may be mixed to a greater or less extent with foreign material or inferior drugs when they come into the hands of the pharmacist or manufacturing chemist. By careful botanical examination the adulterating substance can be detected, and the advisability of garbling or rejecting the lot will depend upon the extent of impurities."[2]

During the autumn of 1896 I had occasion to test, by a method to be discussed later, four samples of strophanthin, "three of which were supposed to be chemically pure. There was found such wide variation in activity that one was 90 times as fatal as another; the strength of the remaining two varied between the above limits. No two samples were even approximately the same strength. What a chance for a sudden fatal termination of an apparently improving heart case!"[3]

Keller[4] concluded as the result of his researches that the therapeutic value of digitalis could be measured in terms of digitoxin, it being assumed that the other constituents were of so little value that they could be ignored. Without going into details, suffice it to say that in 1898 one of my assistants, a trained chemist, working upon known material, was unable to obtain results that would be considered of quantitative value, but was able to show, by determining the minimum fatal dose of the material for frogs, that reasonably constant results could be obtained by the physiological test (unpublished). These results were confirmed by Ziegenbein[5] by determining the minimum fatal dose for frogs and the digitoxin content. Likewise, Famulener and Lyons[6] arrived at the same conclusion from similar experiments. Barger and Shaw[7] showed that tinctures of digitalis were approximately from three to seven times as toxic as the digitoxin obtained from them. Focke and Fromme[8] were also unable to accept Keller's conclusions.

From these citations and others that could be referred to it is evident, since Keller's method has been looked upon as the most reliable chemical method proposed for digitalis (and the chemistry of the other heart tonics, with the exception of strophanthus, is still more involved), that chemical methods are insufficient for the valuation of the physiological activity of the heart tonics. Clinical experience and laboratory experiments have for generations shown that the variation in the activity of these drugs is very great. The age of the plant, method, and time of gathering and drying, preservation or storage, &c., all have more or less influence upon the active constituents contained.

In view of the many clinical observations showing the variation in the physiological activity of these preparations as they are dispensed for the treatment of patients; in view of the confirmation of these observations by numerous laboratory investigators using different methods of physiological assay for measuring such value; in view of the great importance that would accrue to science through the adoption of uniform methods; in view of the great toxicity of these compounds as compared with other and generally conceded deadly poisons which can be assayed by chemical methods; and, finally, in view of the impossibility of assaying these drugs by chemical methods, I believe that this section of the Congress should appoint a committee composed of not fewer than three members, who are actively engaged in pharmacological work, from each country desiring to participate, to consider before the next meeting of the Congress the different methods of physiological assay that have been proposed for measuring the value of the heart tonics, and to determine by exhaustive experiments upon animals the simplest and most reliable methods of assay, the precautions necessary to obtain uniform results, and the best method of expressing the results obtained in language intelligible to the practising physician.

There is no gainsaying that the Ehrlich method of assaying antidiphtheritic serum, which has been adopted by most civilised countries, has been of inestimable value in allowing physicians of all countries and languages to express and consider the results that have been obtained through the specific application of antidiphtheritic serum.

In America the subject of standardisation of antitetanic serum has recently been considered at length by a special committee appointed by the American Bacteriological Society for such purpose, and they were able to agree upon a method of assay for antitetanic serum that has been accepted by the United States Government, and which has brought about uniformity in strength of the serum prepared in that country. A different method is employed in Germany, and none at all, I believe, in Italy, France, England, and other countries. How much better it would have been for the subject to have been settled by an international committee, such as is proposed for the investigation of the proper methods of assay for the heart tonics. Such a committee, working together for the purpose of determining from a practical scientific basis the best and simplest method of assaying and expressing the value of these products to the therapeutist, would accomplish work of world-wide importance to science and to humanity. It is unnecessary to dwell longer on the matter, as the truth is self-evident.

For consideration I desire to present a method more or less modified that has for nearly 15 years been in almost daily use in the laboratory under my supervision. As a matter of history it may be stated that the first experiments were made in the autumn of 1894, the method itself being suggested by Professor Ehrlich's results obtained by testing antidiphtheritic serum.

The method was first published in a paper entitled "The Pharmacological Assay of the Heart Tonics," which was read

[1] A paper read before the Pharmaceutical Chemistry Section of the Seventh International Congress of Applied Chemistry on May 31st, 1909.
[2] Houghton: American Medical Association, June 9th, 1898.
[3] Journal of the American Medical Association, April 3rd, 1897.
[4] Berichte der Deutschen Pharmischen Gesellschaft, 1897.
[5] Archiv der Pharmacie, 1902.
[6] Proceedings of the American Pharmacological Association, 1902.
[7] Pharmaceutical Journal, 1904.
[8] Deutsche Aerzte-Zeitung, 1904.

before the Section on Materia Medica, Pharmacy and Therapeutics of the American Medical Association, June 7th-10th, 1898, and in which a detailed method of assay for the preparations of strophanthus was given as follows:—

Quantitative assay.—A quantitative estimation, by pharmacological methods, of the activity of the heart tonics is a much more difficult problem than is a qualitative assay. Many series of experiments were necessary in order to decide what method or methods were best suited for this work. Too great variation was exhibited in the results obtained from blood pressure experiments on dogs, rabbits, &c., and such experiments are, moreover, quite complicated and difficult to carry out. I found that fairly accurate data could be obtained from the application of a solution containing strophanthin, digitalin, &c., to the laid bare frog's heart, comparing the action of the drug thus tested with that of a sample of known strength. This method, however, was finally abandoned for a simpler one, which gives much better results. It seemed to me quite probable that the strength of the heart tonics could be determined from their killing power when administered to the lower animals. Accordingly, rabbits, guinea-pigs, rats, frogs, &c., were employed for determining the minimum fatal dose of the drug. I finally chose frogs as being best adapted for this purpose. Different species of frogs vary considerably in reaction to the poisons, but the same species behave much alike. I have found it best to employ frogs of a nearly uniform size for the standardisation of any particular tonic. Since it is impossible to obtain on the market frogs of exactly the same size, it is best, when one has a large number of samples to standardise, to have the frogs separated into lots by weight, those in each lot not varying over three grammes; then we can use those weighing 10 to 13 grammes for strophanthin, those weighing 14 to 17 grammes for tincture strophanthus, those weighing 18 to 21 grammes for tincture digitalis, &c. Frogs weighing less than 30 grammes can be obtained at a very reasonable price from fishermen, as they are too small for the table. However, it is necessary that from the moment of capture they be handled with great care and kept in wet moss, &c., until they arrive at the laboratory, when they should be at once transferred to suitable ponds.

The method of administering the poisons and observing results may be briefly stated as follows. Dissolve the strophanthin, or tincture of strophanthus, in normal saline solution. The strength of the medicated solution should be such that the total quantity to be injected shall not exceed 0·5 c.c. The fluid should be measured by means of very slender pipettes, graduated into hundredths, into round-bottomed capsules of about 1 c.c. capacity, from which the last drop may be taken up in a narrow pipette having a long slender point, and the injection then made through the frog's mouth into the abdominal lymph sac. Great care should be taken not to puncture the skin, as this will allow a portion of the injected fluid to leak out. After injection the frogs should be placed in wide-mouthed frog glasses, the plates containing about a quarter of an inch of water. It will be necessary to inject several series of about five frogs each for each sample of the drug to be assayed, a first series to be injected with drug of known standard strength. After testing a large number of tinctures of strophanthus I found that 0·00015 c.c. per gramme body weight represented fairly well the toxic activities of an average sample of tincture prepared from strophanthus (Kombé). The minimum fatal doses of tinctures of strophanthus prepared from various lots of drug obtained from the American market were found to be as follows:—

1	0·00015	8	0·00015
2	0·00026	9	0·00022
3	0·00015	10	0·00017
4	0·00012	11	0·00016
5	0·00013	12	0·00015
6	0·00015	13	0·00025
7	0·00010	14	0·00033

The several tinctures were prepared by one process and with the same menstruum.

The second series are to be injected with doses varying considerably in size. The third series are to be injected after the approximate dose of poison has been found from the second series. From the third series we may almost surely fix the minimum dose. A fourth series should finally be injected, which will fix the limits of strength very closely. The minimum fatal dose should kill at least three frogs out of five. If a less number die it is best to inject another series with doses one point greater.

One very important advantage of the method above outlined for the assay of the heart tonics is the fact that various kinds and sizes of frogs may be employed at any season of the year, the only essential being that at the time the assay is made the standard and unstandardised preparations should be tested at the same time, the frogs being of exactly the same species and kept under exactly the same conditions, comparative results only being necessary, since the standard solution maintains its activity almost entirely unimpaired. A standard tincture of strophanthus retains its strength very well, as is shown by the following tests made on the first standard tincture I employed.

	Minimum fatal dose.
July 6th, 1897	0·00015
Oct. 19th, 1897	0·00015+
Dec. 23rd, 1897	0·00015
Feb. 23rd, 1898	0·00015+
April 25th, 1898	0·00015

The loss in strength was so little in nearly one year that it came within the limits of error. Similar results are observed in regard to the permanence of a concentrated tincture of strophanthus.

Observations continued since the above was written 11 years ago have convinced me that tincture of strophanthus, when properly stored, loses very little in its active properties. This is quite contrary to experience with digitalis preparations, as our experiments show quite conclusively that there is a loss in activity from month to month, even though the preparations are stored with exceeding care.

In making the above tests for the potency of the standard preparation of strophanthus, great care was exercised in the selection of the frogs for the purpose in order to have those of as nearly uniform resistance as could be obtained. Likewise, a large number of frogs were used in making the several assays. I have not had occasion since 1898 materially to change the details of the method of making the assay or deriving standards for the other heart tonics.[9]

The application of the method may be briefly described as follows.

1. *Rules to be observed in order to obtain the most accurate results.*—The reaction chosen as a measure should be the most constant and characteristic obtainable for each given drug. The kind of animal chosen for making the observation should be the one in which the reaction is most clearly discernible. The animals employed for making a test should be of the same species, differing as little as possible from one another in weight, temperament, &c., in order that the resistance of the several animals employed for making a test shall be as uniform as possible. The animals employed for the experiments should be kept under identically the same conditions just before and while the experiments are being made: the same food, the same degree of temperature, &c. In making a quantitative assay the strength of the unknown should be compared with the strength of a standard preparation of the same drug, the assay of both being made at the same time, and the conditions of the experiments being precisely the same in both cases. The standard adopted must possess the pharmacological activity of an average preparation. This standard is obtained by mixing equal parts of not less than ten lots of the preparation derived from the same number of lots of crude drug, which have been determined to be of first-class quality by physical and botanical examination. The action of the drug being assayed should, if possible, be compared with the action of the standard upon the same animal, and in those cases where this cannot be done a sufficient number of animals of as nearly uniform resistance as possible should be employed to rule out any individual idiosyncrasy.

2. *Apparatus.*—Small wire frog baskets with legs and covers or frog glasses and plates will do, care being taken not to set the baskets too deeply in water and not to fill the plates sufficiently full of water to drown the animals. The water should cover the bottom of the baskets or plates about one-fourth inch. Small balance for weighing the frogs. Volumetric flasks for diluting the preparations to be assayed, and glass pipettes, graduated into hundredths of a cubic centimetre, with long narrow points, or better, supplied with needle-points for injecting the frogs.

3. The strength of the preparation being assayed is to be compared with the strength of the standard, the two being tested at the same time and under the same conditions. (See directions already given for the assay of tincture of strophanthus.) The standard is obtained according to the method outlined in the general remarks, which is an average sample of the preparation made from first-class crude drug. 1 cubic centimetre or gramme of the preparation to be assayed is diluted with normal saline solution to make the dilution such that the amount to be injected into each frog shall be about 0·5 cubic centimetre, the same care being exercised in making the solution as would be in making up volumetric solutions for chemical assay. The frogs, which are of the same species and have been kept under the same conditions, are weighed and the weights recorded, the frogs being marked so that they can be readily identified. The frogs should not differ more than 3 grammes in weight, but may be of any size, the aim being to have the resistance uniform. It will be necessary to inject several series of frogs approximately as follows:—

FIRST SERIES.—A. *Frogs Injected with Standard.*

Number of frogs.	Weight of frogs.	Amount of tincture injected per gramme body weight.	Result at end of 12 hours.
1	15 grammes.	0·0001	Alive.
2	16 ,,	0·00015	,,
3	15 ,,	0·0002	Dead.
4	17 ,,	0·00025	,,

The killing dose is between 0·00015 and 0·0002.

[9] An article by the writer on Physiological Testing was published in the last two editions of the National Standard Dispensatory.

B. *Frogs Injected with Tincture to be Assayed.*

Number of frogs.	Weight of frogs.	Amount of tincture injected per gramme body-weight.	Result at end of 12 hours.
1	16 grammes.	0·0001	Alive.
2	15 ,,	0·00015	,,
3	17 ,,	0·0002	,,
4	15 ,,	0·00025	Dead.

The killing dose is between 0·0002 and 0·00025.

SECOND SERIES.

A. *Standard.*

Number of frogs.	Weight of frogs.	Amount of tincture injected per gramme body-weight.	Result at end of 12 hours.
1	15 grammes.	0·00015	Alive.
2	16 ,,	0·00016	Dead.
3	15 ,,	0·00017	,,
4	17 ,,	0·00018	,,
5	16 ,,	0·00019	,,

The killing dose is between 0·00015 and 0·00016.

B. *Tincture being Assayed.*

Number of frogs.	Weight of frogs.	Amount of tincture injected per gramme body-weight.	Result at end of 12 hours.
1	16 grammes.	0·0002	Alive.
2	15 ,,	0·00021	,,
3	15 ,,	0·00022	Dead.
4	16 ,,	0·00023	,,
5	17 ,,	0·00024	,,

The killing dose is between 0·00021 and 0·00022.

THIRD SERIES.

A. *Standard.*

Number of frogs.	Weight of frogs.	Amount of tincture injected per gramme body-weight.	Result at end of 12 hours.
1	15 grammes.	0·00016	Alive.
2	16 ,,	0·00016	Dead.
3	16 ,,	0·00016	,,
4	17 ,,	0·00016	,,
5	16 ,,	0·00016	Alive.

Minimum fatal dose 0·00016.

B. *Tincture being Assayed.*

Number of frogs.	Weight of frogs.	Amount of tincture injected per gramme body-weight.	Result at end of 12 hours.
1	16 grammes.	0·00022	Dead.
2	17 ,,	0·00022	,,
3	15 ,,	0·00022	Alive.
4	17 ,,	0·00022	Dead.
5	16 ,,	0·00022	Alive.

Minimum fatal dose 0·00022.

It will be observed in the above illustration that the minimum fatal dose for the standard tincture of strophanthus was a little larger than that which had been previously adopted, but, in arriving at the percentage value of the tincture, proper correction is made for this variation from the standard by the figures used.

According to the results obtained from the injection of the three series of frogs, 0·00016 cubic centimetre of the standard tincture has the same killing power as 0·00022 cubic centimetre of the tincture being assayed. Hence, the tincture possesses a strength of $\frac{0{\cdot}00016}{0{\cdot}00022} = \frac{16}{22} = 72 +$ per cent. of standard.

Experience has shown that the figures given in the following list indicate what may be taken as a tentative standard for the several preparations mentioned.

	Minimum fatal dose per gramme body weight.
Digitalis, fluid extract, U.S.P., 1890	0·0015
,, solid extract	0·0005
,, powdered extract	0·0005
,, tincture, U.S.P., 1900	0·015
,, digitalin (German)	0·00005
Squill, fluid extract, U.S.P., 1890	0·0012
Strophanthus, tincture, U.S.P., 1900	0·000075
Convallaria, fluid extract of rhizome and roots, U.S.P., 1900	0·00025
,, ,, ,, herb	0·00015
,, ,, ,, flowers	0·00009

These figures were derived in a manner similar to that used for the derivation of the minimum fatal dose for the standard tincture of strophanthus, as previously stated. Reference to the following synopses dealing with strophanthus, digitalis, squill, and convallaria shows how accurately these figures correspond with the results obtained in routine practice in a large manufacturing laboratory. The averages indicate the actual results obtained on all the samples of the preparations tested since the year 1901. The records for the previous five years were unfortunately destroyed in a fire that we had in our laboratory in 1903, consequently the figures for that period are not available. It should be observed that the figure for the standard tincture of strophanthus was given in the paper published in 1898, and that it closely approximates with those derived from the assay of 134 samples of tincture of strophanthus tested, as stated, since the year 1901.

SYNOPSES OF RESULTS.

Tincture of Strophanthus, U.S.P., 1890 (5 per cent.).

—	M.F.D.	Units.
Standard adopted in 1897	0·00015	6666
Revised standard subsequently adopted	0·00016	6250
Average for 134 samples tested since 1901 ...	0·000167	5985

Fluid Extract of Digitalis.

—	M.F.D.	Units.
Standard adopted in 1898	0·0015	666
Average for 83 samples tested since 1901 ...	0·00142	701

Fluid Extract of Squill.

—	M.F.D.	Units.
Standard adopted in 1901	0·0012	833
Average for 61 samples tested since 1901 ...	0·00123	807

Fluid Extract of Convallaria (Rhizome and Roots).

—	M.F.D.	Units.
Standard adopted in 1900	0·00025	4000
Average for 30 samples tested since 1901 ...	0·000245	4067

A further development of this method of assay has convinced me that it would be important to adopt "a heart tonic unit" as a means of expressing the physiological values, the number of such units to be derived directly from the

minimum fatal dose of the given preparation. A convenient unit is obtained by dividing one by the minimum fatal dose per gramme body-weight of frog; or, in other words, the number of units will be the reciprocal of the minimum fatal dose. To illustrate: if the minimum fatal dose of a given drug per gramme body-weight of frog is found to be equivalent to 0·01, then the given substance, assuming that it belongs to the group of heart tonics, would contain 100 heart tonic units: $(\text{m.f.d.}\frac{1}{0\cdot01} = 100 \text{ h.t.u.})$ This rule can be applied to any of the heart tonics as a means of expressing such values in whole numbers.

Instead of stating the full number of heart tonic units in all cases round numbers can be used, which do not vary more than a given per cent. from the actual number of units. Reference to tables shows what may be accomplished.

A correction will be necessary where the minimum fatal dose of the standard is more or less than that mentioned in the table of standard values already given, such correction to be made as per illustration already cited. According to the formula the minimum fatal dose of standard divided by the minimum fatal dose of unknown

$$\left(\frac{\text{m.f.d. of standard}}{\text{m.f.d. of unknown}} = \text{per cent. of standard}\right)$$

equals the percentage value of unknown. The percentage value of the unknown can easily be converted back into the normal minimum fatal dose as shown below.

M.F.D.	Exact H.T.U.	Approximate H.T.U.	% error.
0·0001	10000	10000	0
0·0002	5000	5000	0
0·0003	3333	3330	0·9
0·0004	2500	2500	0
0·0005	2000	2000	0
0·0006	1666	1660	0·4
0·0007	1428	1430	0·1
0·0008	1250	1250	0
0·0009	1111	1110	0·1
0·0010	1000	1000	0
0·0011	909	910	0·1
0·0012	833	830	0·3
0·0013	769	770	0·1
0·0014	714	710	0·5
0·0015	666	660	0·9
0·0016	625	620	0·8
0·0017	588	590	0·3
0·0018	555	550	0·2
0·0019	526	520	1·1
0·0020	500	500	0
0·0100	100	100	0

M.F.D. = minimum fatal dose per gramme body-weight of frog.
H.T.U. = heart tonic units.

In actual practice a table can be constructed similar to the above for all the values that will be derived in the testing of the heart tonics under all conditions. These may be printed on a sheet or sheets of paper and kept for reference in a book form or placed on a chart to hang on the wall of the operation room and used in the same manner as interest or logarithm tables. Such practice would obviate entirely the necessity for the person doing the testing to make mathematical computations unless a correction would be needed, in order to convert an abnormal minimum fatal dose into a normal minimum fatal dose. These variations also can be worked out and converted into tables.

Conclusions.—1. It has been shown by numerous laboratory workers that it is impossible to determine the value of the heart tonics of the digitalis series by chemical assays. 2. It is a well-recognised fact that the toxicity of these products warrants that every effort should be made to present preparations of them of as uniform value as possible. 3. Experiments upon animals have demonstrated conclusively that the variation in the physiological action of some of these products is extremely great. 4. It is urged that this section appoint an international committee to determine and recommend the best method of physiological assay of the heart tonics of the digitalis series and an international standard, "heart tonic unit," to express the physiological value of the pharmaceutical products of this series. 5. The author puts forth the above method of physiological assay, which is the result of nearly 15 years of laboratory study, for consideration as a possible solution of this problem.

Detroit, Michigan, U.S.A.

RUPTURE OF THE SPLEEN; REMOVAL; RECOVERY.

BY T. S. LUKIS, M.B.

THE patient, a schoolboy, aged seven years, was admitted into St. Bartholomew's Hospital under the care of Mr. D'Arcy Power on May 12th, 1908, at 10.30 P.M., having been run over by a van weighing two tons. It was alleged that the wheels passed right across the boy's abdomen.

On admission the patient was collapsed; his face was pale, his lips were blue, and his body was cold and clammy. He had passed fæces and urine under him, but no blood. He was very restless, turning about, and preferring to lie on his face. His pulse was 140 and irregular, the temperature was 96° F., and the respirations were shallow, numbering 34. An examination revealed some bruising of the left side of the chest and abdomen. There was a graze on the left side of the chest over the ninth, tenth, and eleventh ribs and another graze on the abdomen just above the anterior superior iliac spine. The appearance suggested that the wheels did not pass right over the abdomen, but merely grazed the left side of it. The abdomen was tender, rigid, and resonant all over and moved very little with respiration. The child complained of pain, especially in the left lumbar region. No free fluid and nothing abnormal could be felt in the abdomen. Mr. G. E. Gask saw the case and decided not to operate, the condition of the child being unfavourable.

The patient was very restless all night. His pulse kept at 140 and was irregular. His temperature rose to 97°. He passed two ounces of urine free from blood and he vomited food twice. At 6.30 A.M. the pulse became much worse and soon could not be felt. The abdomen was much distended but the distension was partially relieved by an enema at 8 A.M. For the rest of the day until 5 P.M. the pulse could not be felt, but it then returned to 130 and the patient seemed much better, his colour improving.

On the following day Mr. D'Arcy Power decided to operate, the general condition of the child having improved greatly. At 3.30 P.M. chloroform was administered and a vertical incision was made 3½ inches long through the left rectus muscle above the umbilicus, 1½ inches from the middle line. The peritoneal cavity was opened and was found to contain a quantity of blood-clot and blood which was washed out with saline solution at a temperature of 110°. The anterior surface of the left lobe of the liver was found to be grazed over an area of about the size of a crown-piece, but had stopped bleeding. The spleen was drawn out of the wound and was found to be badly lacerated, the lower third of the organ was almost separated from the rest, and there were extensive lacerations in the region of the hilum. The organ was held in place by a mere strand of mesentery which ruptured when an attempt was made to ligature it. As bleeding had also stopped in the spleen, some of the arteries of which were very definitely thrombosed, no attempt was made to recover and ligature the pedicle. The bleeding through the peritoneal opening had never been very free during the operation, but a drainage tube was left in the wound to be an index of possible further hæmorrhage. The child came through the operation very well, and there was no further extensive hæmorrhage, the drainage tube being removed on the sixth day, when the pulse had quieted down to 100. The patient made an uneventful recovery.

The points of interest in the case are. First, that a delay in operating, amounting to 42 hours, did not prejudice the patient's chance of recovery, but probably saved his life. Mr. G. S. Simpson, in an article in THE LANCET of August 11th, 1906, mentioned that of 28 cases of ruptured spleen which he had collected three operated on within two

hours of the accident died; of 14 operated on within 24 hours of the accident 11 survived; of six operated on from 24 to 48 hours after the accident five survived; and of five operated on from two to eight days after the accident one survived. Secondly, that hæmorrhage had so far arrested itself that ligature of the pedicle was dispensed with.

There are two specimens (2308*a* and 2308*b*) in the St. Bartholomew's Hospital Museum which show how nearly the spleen can repair itself after extensive laceration. The first was taken from the body of a woman, aged 42 years, who fell a distance of 30 feet. She was admitted to the hospital in an unconscious condition and was treated for a simple fracture of the left thigh. She died in an exhausted condition ten weeks after the accident from cystitis and morbus cordis. She never complained of any abdominal injury throughout her illness. At the necropsy the spleen was found to be torn on its anterior and external surfaces. The rent passed right through the organ, involving the capsule, and was closed by a firm, white scar, one-eighth of an inch in diameter. The outermost border of the spleen was soft and lacerable, and tore when it was separated from the clot which lay above it. The subperitoneal tissue was stained a dark purple colour, evidently by an extravasation of blood which had taken place some time before death. An encapsuled collection of fluid blood was situated immediately round the spleen. The second specimen was taken from a woman who died 60 hours after being run over by an omnibus. The spleen was extensively torn on the outer surface near the upper margin, but the rupture was closed by a firmly adherent clot. This woman also had a small rupture of the right lobe of the liver.

THE TREATMENT OF CHRONIC SUPPURATION OF THE MAXILLARY ANTRUM: AN OPERATION AND NEW INSTRUMENTS.

BY JAMES DONELAN, M.CH., M.B. R.U.I.,
CHEVALIER OF THE CROWN OF ITALY; SURGEON TO THE THROAT DEPARTMENT, ITALIAN HOSPITAL, LONDON.

FOR several years there has been a growing tendency amongst surgeons to abandon the alveolar method of draining acute or chronic abscesses of the antrum of Highmore. Where an acute abscess is obviously connected with dental disease that method may still be adopted in the hope that the evacuation of the cavity may in a short time be followed by cure. The recorded experience, however, of most surgeons in this country and abroad appears to be that this result is but seldom attained and then only when all the conditions, especially that of the middle meatus, are favourable and when there have been very few or no previous attacks. The more common issue is that the acute condition becomes chronic and the patient has to go on syringing through the alveolus until he makes up his mind to have some further operation that will not only allow freer drainage but will permit the path of buccal re-infection to be closed.

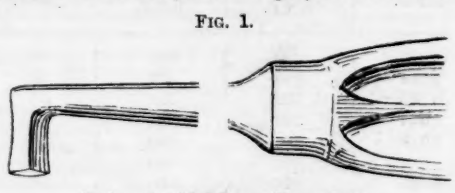
One of the chief causes of the abandonment of the alveolar method is the recognition of the fact that maxillary suppuration is far more frequently set up by infective conditions within the nose or its other accessory sinuses than from the teeth, which are perfectly sound in a great many cases. Such antral abscesses are now usually treated in the acute stage by intranasal puncture and irrigation together with removal as far as possible of all obstruction to the natural outlet in the middle meatus. When this fails, as it must be admitted it very often does, further measures consist in the removal of a greater or less portion of the external wall of the nasal cavity so as to drain the antrum into the inferior meatus or, in very obstinate cases, the radical operation through the canine fossa with a large counter-opening into the nose.

The experience of the last 12 or 15 years shows that with the increasingly early recognition of the causes of intranasal suppuration the necessity for the radical operation arises much less frequently than was formerly supposed and that it should be reserved for cases in which other measures have failed or those complicated with well-marked polypus formation in the antrum or nasal cavity. My own experience is that if a sufficient opening is made in the exterior nasal wall and nasal polypi and part of the middle turbinal are removed at the same time one often avoids the canine operation despite considerable degeneration of the antral mucous membrane.

For the past ten years I have given up the alveolar route except in a very few cases of acute abscess of dental origin, and none of these was cured without eventual recourse to the intranasal method. Realising that removal of part of the nasal wall of the cavity was likely to give better results than any other method I have tried instruments of various forms with a view to improving the technique, especially in the clean and rapid removal of the excised portion. Forceps were found slow and uncertain in a rapidly bleeding cavity, while breaking down the partition roughly with a burr was followed by a greater tendency to cicatricial contraction with very often formation of little pus pockets between the irregularly torn fragments of the mucous membrane. Moreover, in many cases patients complained of severe neuralgic pain for several hours after the burr was used.

With a view to overcoming these objections I designed a right and left rectangular chisel, of which the present is the third modification. When these instruments were shown lately at the Laryngological Section of the Royal Society of Medicine,[1] reference was made to some instruments designed for a similar purpose by the late regretted Dr. McKay MacDonald. That was the first time I heard of Dr. MacDonald's instruments. I have never seen them, but I was given to understand on that occasion that they were made in sets of four and were in other respects quite different from mine. The chisel (shown in Fig. 1) has a stout handle

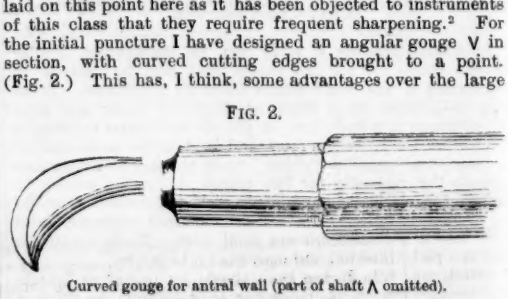
FIG. 1.



Rectangular chisel for maxillary antrum.

and shaft with a double-edged blade wrought in the same piece at right angles. Along the "obverse" side this blade has a strong ridge slightly hollowed in the middle to facilitate retention in the cut. The "reverse" side is flat and placed at an angle of about 50° to the shaft. My first pair of chisels were made of English shear steel and gave satisfactory results without a second sharpening in 63 cases. The next were of too soft a material, had to be sharpened twice in 13 cases, and in the last of these a portion of the blade broke off in the left antrum but was recovered when the bleeding had ceased. The present instruments, by Messrs. Krohne and Sesemann, have been used in 27 cases, some of them of old persons with hard, thickened bone, and do not yet require sharpening. The resistance of the living bone of the antral wall, even more than an eighth of an inch thick, has no perceptible ill-effect on a good steel edge. Stress is laid on this point here as it has been objected to instruments of this class that they require frequent sharpening.[2] For the initial puncture I have designed an angular gouge V in section, with curved cutting edges brought to a point. (Fig. 2.) This has, I think, some advantages over the large

FIG. 2.



Curved gouge for antral wall (part of shaft ∧ omitted).

curved solid trocar often used for this purpose, as it not only pierces the wall but makes a clean-edged < cut which gives the starting lines for the subsequent incisions.

The operation may be performed in some cases of young persons under local anæsthesia and suprarenal ischæmia. I have not found this method satisfactory even in persons of considerable fortitude when the bone was hard and there was

[1] Proceedings, vol. i., No. 6, p. 112.
[2] Ibid.

any difficulty in cutting it down to the floor of the nose. But for this it would be the ideal method. I have usually employed general anæsthesia. In a few cases suprarenal preparations were used beforehand to produce local ischæmia, and I have seen them used by some of my colleagues who have done me the favour to make trial of these instruments. On the whole, it seemed that local ischæmia gave more trouble than it was worth when used with a general anæsthetic. The general narcosis was as a rule much delayed, sometimes nearly an hour even in the hands of an expert, and in most cases took place only when the antagonism of the suprarenal agent had been overcome to such an extent that the ischæmia was so reduced as to be of little practical value. On the other hand, if any difficulty arose in the course of the operation the application of any of the ordinary suprarenal solutions for a few minutes sufficiently arrested the bleeding to permit removal of strayed fragments and even examination of the cavity with a small aural mirror.

A point of considerable importance in these operations is the treatment of the inferior turbinal. The natural opening of the maxillary antrum being so secluded from the respiratory current, and some patients on whom the radical operation had been performed having complained of neuralgic pains in cold weather which were relieved by lightly plugging the nostril with gauze, it seemed advisable to avoid interference with the turbinal as much as possible. Accordingly in some of the earlier of the present series of 103 antra (including 12 double cases) an effort was made to preserve the turbinal intact by removing the whole inner wall of the antrum below it. This, however, formed too much of a slit-like aperture to remain permanent in all cases. I have never removed the "anterior half-inch" or the "anterior third" as recommended by so many authors for the following reasons. This part of the turbinal bears only rarely any relation to the maxillary antrum, and then only a very small and useless one for surgical purposes. The antrum in the vast majority of a large number of skulls examined by the writer, when present at all, is in relation to the second, or even the third, molar tooth and its greatest width will constantly be found in this situation. On the other hand, the anterior third of the inferior turbinal, which is that portion attached to the inferior turbinal crest, corresponds to the solid origin of the nasal process of the superior maxilla, and the dependent fleshy portion in all but the negro races is almost constantly in a line with the nasal border of the superior maxilla. The only cavity, therefore, in constant relation to the anterior third of the inferior turbinal is the tear duct, and this probably explains how it is the latter has been wounded sometimes when this portion of the turbinal has been removed with an idea of facilitating access to the antrum. Moreover, when this part of the turbinal happens to correspond to any part of the antral cavity it does so only where the latter is extremely shallow and where, if a curved trocar is pushed, there is very great danger of wounding the anterior wall or even the cheek. On the other hand, the middle third or posterior half of the turbinal bears a practically constant relation to the widest part of the cavity. It is in this region, therefore, that the initial opening should be made, and I have done so with unvarying good results in 97 out of my 103 cases (the remaining six were those in which the turbinal was preserved intact). At first the middle portion of the turbinal was cut out by a rapid use of the two edges of the chisel, but it was soon found to be unnecessary to divide the operation into two stages as with a little practice it is easier to carry the incisions through both turbinal and external wall.

The patient should be anæsthetised in the reclining position with the head slightly raised and turned to the right, where the surgeon stands for either cavity. It is better to stop the naso-pharynx with a captive sponge. Taking, for example, the right antrum, the angular trocar should be applied at a point not less than an inch and a quarter behind the posterior border of the nostril immediately below the inferior turbinal in such a way that the lower limb of the < is nearly parallel with the floor of the nose, while the upper edge raises and cuts through the turbinal. The puncture is made slowly and so that while the point travels towards the deeper part of the cavity a slight swing of the handle towards the middle line obtains the full advantage of the curved cutting edges. It will sometimes, though rarely, be found needful to shift the point a little higher or farther back, but never forwards. The < puncture having been made, the chisel corresponding to the figure should be held with its "obverse" surface upwards, slipped into the upper limb of the <, and carried backwards and somewhat upwards as far as may be thought necessary, generally from half to three-quarters of an inch. It should then be drawn back, slipped into the lower limb of the <, and pushed back, cutting with its distal edge along the floor for a similar distance but taking at the end a turn upwards towards the termination of the first incision. Then the companion instrument (reverse of figure) should be slipped along the upper cut with its "obverse" surface downwards and a short cut down and back made to complete the excision. A slight twist of the handle at the end will send the fragment into the meatus whence it can be removed with forceps. The whole excision takes only a few seconds from the initial puncture. The cavity should then be explored with the little finger, or where this is not possible with a large probe suitably bent. Further portions of the wall may then be pared away if desired, the proximal edge of the blade finding its chief use here, and it is often advisable to remove what remains of the posterior end of the turbinal. This may be done with either chisel used as a spokeshave. At this stage suprarenal products and a small aural mirror with a good head-light will often be found useful in examining cases of long standing which are inaccessible to the finger. Even if the mucous membrane is much degenerated no curetting should be attempted, as in the majority of cases it gradually becomes healthy. If, however, there are distinct polypi, and especially if a similar condition has co-existed in the middle meatus, it will probably be better to proceed with the radical operation. In either case the cavity should next be injected with a 10-volume solution of hydrogen peroxide or washed out with sterilised water or saline solution. After operation it is better to use no packing. Hæmorrhage is rarely troublesome.

The after-treatment consists in the regular antiseptic douching, which may be gradually discontinued in from four to six weeks. For this purpose the writer has designed an antral tube which can be fitted to any douche or Higginson syringe. If pus is found after that time apart from any temporary local inflammation it will probably proceed from the frontal sinus or anterior ethmoidal cells. In 15 of the cases referred to the middle turbinal alone or associated with polypi had to be removed as part of the operation on account of intermittent symptoms of frontal retention, and in six of these it afterwards became necessary to open and drain the frontal sinus. Leaving intact the anterior portion of the inferior turbinal in no way interferes with the after-treatment, while it seems to afford protection to the newly exposed antrum from the respiratory current.

The results of the cases operated on in the above manner appear to show that the search for a drain to these cavities in the most dependent part is quite unnecessary. No anxiety need be felt as to the result in cases in which the antrum extends below the level of the floor of the nose, as it would seem that in these cases, as in others, the cilia of the rejuvenated mucous membrane gradually adapt their action to the position of the new opening. The only inconvenience I have known patients to suffer from a large opening in the nasal wall was in some cases of regurgitation of food through the nostrils in sea-sickness, when some particles became lodged in the antral cavity. The important thing in chronic antral suppuration is to operate as early as possible by a sufficient removal of the middle or posterior part of the external nasal wall and not to allow such cases to drift on to formation of nasal polypi and polypoid degeneration of the antral mucous membrane, which may need the much more severe and sometimes disfiguring radical operation.

PS.—Since the foregoing paper was written Mr. A. S. Underwood has published[3] the results of his studies on the superior maxilla, which bear out fully the views expressed above as to the proper site for operation, as well as the objections to instruments like the burr.

Manchester-square, W.

[3] Brit. Med. Jour., May 15th, 1909, p. 1178.

APOTHECARIES' HALL OF IRELAND. — The quarterly examinations will begin on the following dates:—First professional, Monday, July 5th; second professional, Thursday, July 8th; third professional, Monday, July 12th; final professional, Wednesday, July 14th.

APHASIA SUCCEEDED BY JACKSONIAN EPILEPSY; OPERATION; RECOVERY.

BY W. ALEXANDER, M.D. R.U.I., F.R.C.S. ENG.,
VISITING SURGEON TO THE LIVERPOOL WORKHOUSE HOSPITAL.

A MAN, aged 33 years, was admitted to the Liverpool Workhouse Asylum Ward on Nov. 4th, 1908, with a certificate of insanity. He was brought to the hospital by a police constable, who had found him lying in a doorway in a nude condition. On examining him in the asylum next morning it was found that it was aphasia and not insanity that he was suffering from, and he was transferred to the medical wards. He understood what was said to him, and could assent to, or dissent from, any statement by nodding or shaking his head. The pupils were equal, there was no facial paralysis, but partial loss of power of the right hand and arm (the hand lay in a semi-flexed position). There was also some athetosis. On the 8th the condition was unaltered except that the fingers of the right hand had become more flexed and the athetosis had ceased. A firm depressed scar was visible on the scalp over the left anterior parietal region, the scalp moved freely, and the bone was not apparently injured. He remained in this condition till the 9th. The man with whom he lodged called on Nov. 8th and said the patient was often the worse for drink, that on the night in question (Nov. 1st) he was quarrelsome, had called his wife names, and had been turned out of doors in consequence. He did not think the patient could not speak; he was noisy. He could not say how the patient passed his time from Nov. 1st to Nov. 4th, the day of admission to asylum. At 5.30 A.M. of the 9th the patient had a right-sided epileptiform attack affecting the arm, afterwards the leg and face, with only slight loss of consciousness. When the twitching of the right hand began the patient was quite conscious, but as the attack proceeded he gradually became unconscious. He had another fit in the evening of the same day at 11.30. On the 10th the patient had three similar fits during the day. On the 11th he had 20 fits and was very exhausted, the pulse-rate increasing and the pulse becoming feebler. An epileptic mixture containing bromide of potassium was prescribed. On the 12th he had six fits in an hour. He was transferred to the surgical ward at 2.30, as the fits still continued and the patient became feebler. The skull was trephined over the left motor area. A rectangular piece of bone, three inches by two inches, was removed. The dura mater was normal and was opened by four slits, each extending right across the breadth of the opening in the bones. This permitted the cerebral convolutions to be easily examined over the greater part of the motor area. At the posterior extremity of the third left frontal convolution a conical elevation could be distinctly seen. The cone was formed of apparently healthy brain substance. The needle of an exploring syringe was passed into the apex and a full measure (one drachm) of clear fluid was withdrawn. A pair of closed sinus forceps were then passed along the needle of the syringe into the cavity, and on separating the blades rather more than half an ounce of fluid came away. The veins of the pia mater were congested, and along each side of the veins broad areas of whitish flocculent œdema were seen. Pricking the œdematous area gave vent to drops and spurts of clear fluid. The flaps and fenestrated dura mater were now bathed with normal warm saline solution and the flaps replaced and stitched up with silkworm gut. A small glass drainage tube was placed for 48 hours in the posterior angle of the wound. The head was well enveloped in sterile gauze and cotton wool. Not a single vessel had to be tied from start to finish of the operation, and no ligature of any kind was left beneath the replaced flaps. The bone removed was not replaced.

After operation the patient was rather restless, but at 10.30 P.M. he went to sleep and slept until 4 A.M., when, according to the nurse, he had a fit lasting two minutes. He then slept again and awoke at 7.30 A.M. On Nov. 13th he had a comfortable day, sleeping a good part of his time. After awaking from sleep in the afternoon he had two fits, one at 3.30 and one at 3.40. He could now move the flexed fingers of his right hand just a little. On the 14th he had a good night, with no fits. He could now say "yes" and "no" and a few other single words, but could not carry on a conversation. The head was dressed and the drainage-tube was removed, some clear fluid coming from it. He slept and dozed the greater part of the day. On the 15th he had slept well all night with no fits. He asked for what he wanted by signs and said a few words; he could also open the right hand and grasp with it. On the 20th he continued to improve; there were no fits; he could now carry on a conversation, though with difficulty. He told us that his name was ——, aged 33 years, a dock-labourer, that he was born in Liverpool, that his parents were dead, but that a brother and two sisters were alive. He could count up to 20, but always missed 18. By the 24th the patient could talk much better; there were no fits. He stated that the scar on his scalp was caused by a piece of coal falling on his head 16 years ago, when he was a miner at Wigan. He never had any fits before his admission to the hospital. He admitted having taken occasionally one or two glasses of whisky, but was not in the habit of getting drunk. He remembered the lodging-housekeeper putting him out on the street on Nov. 1st, but did not remember anything afterwards until he found himself in the male asylum, where male nurses attended him. He also remembered coming to hospital, where there were female nurses. The three days—Nov. 1st to Nov. 4th—are a blank to him. On Nov. 26th the stitches were removed. The wound healed by first intention and without pyrexia. On Dec. 4th the patient was allowed to get out of bed. There were no fits; the paralysis and aphasia were quite gone. He could count up to 20 without omitting any numbers. On the 16th he went out at his own request. On Feb. 5th he came to report himself. He had been working at the docks and could do a good day's work. There were no signs of any defect about him and he said he obtained jobs just as well as any other man, so that evidently no defect was noticed in the man by the agents of the employers who engage the men.

There are several points of interest in this case. The preliminary diagnosis of insanity was probably made in difficult circumstances, and was no doubt due to the history of violent conduct produced by drink and to his mute condition. The mutism of insanity and the inability to speak of aphasia are very different things and not likely to be mistaken for each other provided we are enabled to have a look at the eyes of the patient. A partially drunk aphasiac would make an error quite possible, but when he was sober there could be no doubt about the matter. It is also clear from the history, which was, however, very imperfect, that the aphasia came on between Nov. 1st and Nov. 4th, the night of his admission. He was quarrelling with his wife that night, and in consequence was turned out of the house in his night attire. From Nov. 1st to Nov. 4th is a blank to him and to us. The cyst, if cyst it was, or rather collection of fluid, must have formed or increased very rapidly during the three days to produce the aphasia and the paralysis. An aphasiac cannot very well quarrel, and he was probably not aphasic on Nov. 1st, and possibly the excitement and the drink or the "chucking out" had something to do with the onset of aphasia soon after the quarrel. The cavity, when the fluid was removed, had no very distinct walls. We opened it up freely, but for obvious reasons we could not examine it so thoroughly as to be sure of its exact nature, since the patient was in a critical state and time was of the greatest importance. It was not in the ventricle, as it was near the surface and the cavity was limited in its extent. It seemed to be one of those adventitious collections of fluid that occur mysteriously in the tissues, and which form cysts in time by the pressure of their contents upon the periphery of the fluid effusion. In this case the effusion was too recent to permit the formation of any distinct cyst wall. We may ascribe the aphasia and the paralysis to the cyst. It was interesting to notice that the whitish flocculent œdema that is seen so frequently in operations on true epilepsy was present in the case. I am so familiar with œdema in our operations on epilepsy that I did not altogether expect to find it in this Jacksonian variety. That epilepsy is probably due to circulatory disturbance is now fairly extensively believed, and in this case the formation of the quasi cyst was in itself a circulatory disturbance. The *modus operandi* was also influenced by circulatory considerations, to which this successful case gives a considerable amount of support, but the questions are too large to discuss further on this opportunity.

Liverpool.

A CASE OF CATALEPSY OCCURRING IN A BOY AGED 15 YEARS.

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THE patient was brought into the out-patient department of the Derbyshire Royal Infirmary with a history of having had three "fits" during the preceding six weeks. Up to that time he had been perfectly healthy, and there was no evidence of his having had fits or convulsions during infancy. His previous medical history was good, but he appears to have been very backward while at school. His father at the time of his admission stated that in these fits the boy had first become very stiff for a short time and then jerked himself about, but had never fallen, as there had always been time to recognise what was about to happen and to get the boy into a chair. There had not been any passing of urine in these attacks, neither had he ever bitten his tongue. There was no history of fits of any kind in any other member of the family. The last fit occurred some two weeks before the patient was first seen, and was apparently followed by a state of stupor, in which the boy would not feed himself, and had to be made to pass his urine. Once his attention was drawn to his necessities, however, he passed it himself naturally. Otherwise he had been in a condition of blankness, and it was for this condition that he was brought into the hospital.

When first seen the boy was in an absolutely passive condition. He allowed his limbs to be put into any position, and made no attempt either to resist or to alter their attitude. The extremities could be moulded into positions as if they had been made of wax. He was, however, alive to painful stimuli, and resented pinpricks by frowning and finally by turning his body away from the stimulus. The only muscles which were active were those of the eyes; these were moved voluntarily, and the patient watched proceedings with interest. The general condition was very good, the boy being well grown and with remarkably well-developed muscles.

Nervous system.—Motor: Active movements, with the exception of the ocular muscles, were in entire abeyance. The legs and arms could be put into any position without the least resistance, and they were maintained in these attitudes until, the weight of the limbs overcoming the muscular strength, they slowly dropped. Thus, the arms being erected over the head, they remained in this position for over a quarter of an hour. Then they began to sway, and the excursions becoming wider and wider they finally lay by the side. The legs fell more quickly, being exhausted in from five to ten minutes. After the sensory system had been investigated by the use of a pinpoint the passivity of the limbs lessened, and very considerable strength was manifested. There were no tremors and no evidence of any head retraction. The boy on admission was able to stand, but would make no attempt to walk. He had to be led about as though he were blind. The muscular tone was normal. Sensory: There was much resentment displayed to painful stimuli. In most cases this was manifested by a screwing up of the facial muscles. Reflexes: The knee-jerks were present and normal. Ankle clonus was absent on both sides; Babinski's reflex was similarly absent on both sides. The superficial reflexes were present and active. Bladder and rectum: There were incontinence of urine and marked constipation. Special senses: There was no nystagmus. The right pupil was slightly larger than the left. The discs were normal. The pupils reacted normally. On his admission it was impossible to say whether he was able to hear or not. He took no notice of anything that was said to him. Mental: Entire negativism, altering occasionally to a state of anger. There was no evidence of any cerebral irritation. Speech: Absent. There were no trophic lesions of any kind present on his body. The heart, lungs, and abdominal organs were normal.

The boy would not feed himself and had to be spoonfed. Shortly after his admission he would not swallow what was put into his mouth, and he had to be nasal-fed. After the first meal given in this way, he took his food perfectly well if it was placed in his mouth. On the eighth day of his stay in the hospital he developed a very slight but quite definite squint, the left internal rectus apparently being at fault. This, after varying from day to day, disappeared within a week of its appearance.

The boy was treated with galvanism and massage, and although at the time of application he seemed to improve, he remained in the state described for over 16 weeks. During this period he never, apart from electrical stimulation, made a single voluntary movement. He lay on his back staring at the ceiling and generally soaked in urine. While being galvanised he turned himself about in order to evade the battery, and on several occasions shouted out, but as soon as the current was taken off he relapsed into his former state. Some ten weeks after his admission contractures of the fingers made their appearance, and any effort to extend them met with the most violent resistance. This was followed by flexion of the legs on the thighs, and of the thighs on the trunk, but the mental condition remained just as it was, and the limbs when straightened could be moulded in the same way as when he was first seen.

Sixteen weeks after his admission the boy was suddenly heard singing in the night, and shortly after he spoke a few words apart from electrical stimulation. From this time he recovered rapidly, but for some time after he was able to feed himself and to speak his muscles were in their original state of waxy flexibility. Thus after having been given a plate of rice and a spoon he would sit and stare at the food without making the least attempt to eat it. Then when some was lifted into his mouth he would start feeding himself and would continue to raise the spoon to his mouth long after the plate was empty. When told to stop he would slowly obey. If he was questioned, he would at first make no effort to answer, neither would he look at the questioner, but after a long pause he would in a peculiarly monotonous tone reply. This transition state rapidly passed off, and the boy became what was probably his normal condition. This was one of irritating stupidity, mingled with a low degree of cunning. He was intensely disobedient and stole consistently from the other patients in the ward. He had no idea of decency, and would get out of bed the moment the nurse's back was turned, and, taking off his clothes, would run about the ward naked. He was able to read and write and to work out simple arithmetical problems. He was sent to the Derby Infirmary Convalescent Home, where he stayed three weeks.

The temperature throughout the whole period of his stay in the hospital was normal. There was never any albuminuria.

My reasons in publishing this case are its rarity and the duration of the condition. When he was first seen the question raised was whether he had not some meningeal trouble, and this was made all the more probable by the inequality of the pupils and the squint. There was never any elevation of the temperature, and the pulse was always perfectly normal. There were no signs of any cerebral trouble, and a diagnosis of hysteria was made. This was confirmed by the appearances of the contractures. A diagnosis discussed was one of post-epileptic stupor, but the length of time which had elapsed between the last fit and his admission, 14 days, put this out of the question. Then again, the fits were not perfectly typical of epilepsy.

Of the many hysterical manifestations the case conformed most closely to that known as catalepsy. This state nowadays is considered to be almost always hysterical, although Whitla in his recent text-book says that it may be associated with such diseases as meningitis and melancholia. Osler, Fagge and Pye-Smith, and Savill all agree in regarding it as purely hysterical. Kraepelin, on the other hand, looks upon catalepsy as a symptom more or less synonymous with "flexibilitas cerea," and considers it characteristic of dementia præcox. Maurice Craig, under the heading of "Catatonic Stupor," describes the following condition associated with mental depression, delusions, and hallucinations: a markedly resistant condition of the muscles, which, when overcome, remain in whatever attitude they are placed; mutism, and occasionally automatic imitative speech, "verbigeration."

Dr. Hack Tuke, in Allbutt's "System of Medicine," states that catalepsy may be a condition *per se*, or it may be associated with mental symptoms. He describes a case which resembles the one above as belonging to the former class. In his opinion it is a rare condition and one which almost always affects young females. The onset is generally ascribed to mental shock of some sort and the symptoms come on suddenly. In the case I have just described there were no mental symptoms of the nature of delusions or

hallucinations. The boy was certainly mischievous and remarkably unintelligent, but he did not differ in these respects from many boys of whose mental health there is no doubt. Dr. Hack Tuke further remarks that the memory for events which have occurred during the attack may or may not be impaired. In my case many small details of ward discipline and also fragments of conversation which had been spoken at his bedside during the stage of negativism were remembered with the greatest clearness.

The pathology of these cases is uncertain. The immediate factor at fault is the motor inhibitive function of the cerebrum, but this does not carry us very far to their solution. The primary trouble is essentially that of the group of functional disease to which it belongs—namely, the hysterical diseases. In the consideration of mental disturbances from the standpoint of function, one can recognise three factors which, acting normally, are responsible for comprehension, thought, and memory. These three factors are the afferent, the central, and the efferent paths of the central nervous system. Any element of these three systems may influence one or all the elements of the other two. In highly developed organisms the afferent and efferent systems work upon each other through the central; for some actions, however, the activity of the central processes is not necessary. In health the central system works upon the efferent by a process of excitation and depression, the healthy exercise of these functions constituting judgment. In a steady state of health the central system does not materially alter or affect the normal impressions received from the afferent paths, but in disease it does, the result being delusions. Delusions are the result of a disturbed central mechanism—that is to say, they are the outward and visible sign of intrinsic central trouble. Intrinsic afferent trouble constitutes such diseases as blindness, deafness, and the like; intrinsic efferent trouble the various paralyses. A diseased action of the central mechanism on the efferent system results in disturbances of judgment. Most diseases of the mental organisation are referable to excessive, diminished, or perverted function.

In the case above considered, we may imagine the higher elements of the central mechanism to be, as it were, blotted out. That is to say, comprehension and thought, at the time of his attack, were non-existent. With the abolition of comprehension, the influence of this function on the actions disappeared, the lad manifesting no sign of judgment, and so arose such symptoms as refusal of food, incontinence of urine, and the plasticity of the limbs. Memory, as we have seen, was not altogether in abeyance, but was not associated with any efferent impulse. The trouble was one in which the highest functions only were concerned.

The recovery of many of these cases is not infrequently accompanied by an attack of maniacal excitement, as though the central mechanism, after its long period of inactivity, begins work with its functions exalted.

I am indebted to Dr. F. B. Thornton of Derby for permission to publish this case.

Cheadle, near Manchester.

REMOVAL OF SUPERFLUOUS HAIRS BY IMPROVED METHODS.

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THE removal of superfluous hairs by means of electrolysis is a very satisfactory minor operation when well carried out. Frequently, however, a small scar is produced at the seat of operation, and in order to avoid such a scar a simple precaution is necessary which is not mentioned in works on medical electricity. Like all other operations, it must be performed intelligently and not blindly, without regard to the principles of electricity, anatomy, and physiology. It is often spoken of as if the root of the hair was burned by the electricity as a nævus is burned by a cautery point. This is quite a wrong view to take of the operation. The destruction of the root of the hair is caused by an acid or an alkali, generated at the positive and negative poles respectively. 1. If a needle which is not acted on by acids is used, such as gold or platinum, and it is connected to the negative pole, then nascent chlorine appears round the needle with the formation of hydrochloric acid and destruction of the hair bulb. It is as if a minute quantity of free hydrochloric acid had been injected into the hair follicle. 2. If a needle which is acted on by hydrochloric acid is used, such as zinc, the acid attacks the zinc, forming chloride of zinc, and this goes into solution; thus both hydrochloric acid and zinc chloride are set free in the hair follicle. In this case a little of the zinc remains in the follicle, but is not driven in to the surrounding cells, and therefore there is no staining of the skin where a corrodible needle is used, provided it is connected to the negative pole. 3. If a non-corrodible needle such as gold is used for the operation, and it is connected to the positive pole, free sodium is liberated at the surfaces of the needle; this at once combines with the water of the tissues to form caustic soda, which in turn attacks and destroys the root of the hair. 4. If a corrodible needle, such as a steel needle, be used and be connected to the positive pole free sodium is liberated at the surface of the needle, which at once becomes caustic soda, which attacks the iron, forming oxide, and hydrate of iron. This remains in the hair follicle and therefore does not stain permanently the skin. But there is a much more important action going on in this case which does stain the tissues, and that is the transport of iron ions from the steel needle into the actual cells of the skin, where they are fixed and remain as iron oxide or rust. For this reason a corrodible needle must never be attached to the positive pole in this operation. No pigmentation is therefore produced if one uses a corrodible needle, provided it is connected to the negative pole.

When the current is turned on and the needle which is attached to the negative pole touches the skin, acid formation at once begins. As the needle sinks into the hair follicle the acid also penetrates deeper till it reaches and destroys the bulb of the hair. The needle must be left a sufficient length of time to allow sufficient acid to collect in the follicle to destroy the root of the hair. But while the root is being destroyed, so is the skin around that part of the hair which is embedded in the upper layer of the skin. It is quite unnecessary to destroy more than the root of the hair, and this destruction of surrounding tissue is the cause of future scarring. This can easily be avoided by a simple method of insulating the needle to within a sixteenth of an inch of its point. When a needle is so insulated and thrust into the root of the hair, the free acid attacks only the root and therefore there is no scarring left after the operation. Patients have remarked to me on the decrease in the amount of reaction following the operation when the insulated needle has been used, and it is very striking to an operator who uses an insulated needle after being accustomed to a naked needle.

The method of insulating the needle is very simple. In the first place, I prefer to use a fine wire in place of a needle. I find the wire supplied with the finest hypodermic needle useful for the purpose. It is finer than a No. 12 sewing needle, which is the finest sewing needle obtainable. Another advantage of this wire is that it has not a sharp point and therefore is not so likely to leave the hair follicle and make a false passage. If too much force is used in introducing the wire it bends and makes further progress impossible. By its extreme fineness it finds its way down by the side of the hair, and in the case of hairs whose roots take a curved course in the skin it follows the curve instead of making a false passage, as the finest sewing needle does. Unless the point of the needle reaches the actual bulb of the hair the operation is useless. Therefore a fine wire with a blunt point is better than a fine sharp needle for the purpose.

The wire should be insulated as follows. Hold a piece of shellac in the left hand and the wire in the right. Heat the wire to redness in a Bunsen flame, and while red hot embed it quickly in the shellac all except its point and lift it out again quickly, thus leaving a sixteenth of an inch uncovered by shellac. There is thus a thin layer of shellac left on the wire, and it fits it so well that no irregularity appears to the naked eye in the outline of the wire as compared with its former state. The tip of the wire must not touch the shellac. One-sixteenth of an inch remains naked at the tip of the wire. The wire cuts into the shellac when it is red hot as one cuts a banana with a knife.

Conclusion.—To sum up, the essentials of good results in this operation are: (1) connect the needle to the negative pole; (2) use a fine stiff wire as a needle (the wire supplied

with the finest hypodermic needle is a suitable one); and (3) insulate the wire so that only the last one-sixteenth of an inch supplies the current. The advantages of this method are two—(1) no scarring after the operation; and (2) a lower per cent. of re-growth of hairs.

New Cavendish-street, W.

A SIMPLE METHOD OF DIAGNOSIS IN PARALYSES OF THE EXTRINSIC MUSCLES OF THE EYE.

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IT is quite unnecessary to insist on the importance of being able to diagnose the affected muscle in a case of diplopia; it is equally unnecessary to point out that the methods generally adopted entail either a very efficient memory or a severe mental effort on the part of the physician making the diagnosis. The almost invariable difficulty which students find in their attempts to decide which muscle is affected seems to show that the methods employed do not allow of the diagnosis being readily and exactly made.

It appears impossible to bring any new observations to bear on such an old subject, but the grouping of the facts here given and the generalisations from them appear to make the subject easy of comprehension and the diagnosis of the particular muscle simple, the only requirement being the elementary one, that the direction, point of insertion, and action of each of the muscles should be known.

The diagnosis proceeds in stages. I., Is there a muscle paralysed? II., What is its action? III., Which eye is affected? IV., Which of the muscles having this particular action is affected? By thus proceeding from the general to the particular the possibilities are gradually narrowed down till the final test consists merely in discriminating between two similarly acting muscles.

It will be noted that the scheme here elaborated pays no attention to crossed or homonymous diplopia, though the first step taken by many is to determine, Is the diplopia homonymous or crossed? This method of proceeding may be very misleading; for instance, a superior oblique paralysis should lead to a slightly convergent position of the eyes, and the diplopia, though chiefly vertical, should be homonymous; but if the patient previously had an exophoria, the divergence due to it might exceed the convergence due to the paralysis and the diplopia would be crossed, which, of course, would contra-indicate a superior oblique paralysis. The general statement given below as Section 4, that the angular separation of the images is greatest when the object is in the line of the affected tendon and the torsional displacement, if any, is greatest when the line from the object to the eye cuts the affected tendon at right angles, will be found very useful.

There are several fallacies which should be avoided if a correct diagnosis is to be arrived at. The eye which obviously deviates from the object fixed is not necessarily the one affected, for the patient may have very good vision in the affected eye, and bad vision in the one whose muscles are normal; the secondary deviation of the unaffected eye may then be mistaken for the primary deviation of the affected one. In testing for torsional displacement, too, the vertical image is not necessarily due to the unaffected eye. The patient will often say that the coloured object (candle) is leaning and the white one is vertical; and then if the coloured glass be moved to the other eye the white object is still vertical, and the coloured sloping. It is quite unnecessary to determine in which way the image slopes, the important point is, in which part of the field is the angle of inclination of the one image to the other greatest?

The method briefly stated is as follows:—

1. *A muscle is paralysed when a diplopia occurs in one part of the field of vision or when there is diplopia over the whole field and the separation of the images increases in one direction.*

A red glass is placed before the right eye, and the patient is directed to look towards a lighted candle which is successively raised, lowered, moved to the right and left. If the patient sees two candles in some positions but not in others, or seeing two in all positions the distance between the two increases in certain directions, there is a muscle paresis.

2. *The direction in which the diplopia is greatest*[1] *indicates the direction of action of the affected muscle.*

In testing for the direction of the greatest diplopia the horizontal and the vertical components must be considered separately. The candle is held straight in front of the eyes, and the patient is directed to note how much one image is to the right of the other, and for the present to neglect entirely any difference in level; he should be asked to estimate in inches the distance between them and to hold up his two index fingers in their respective positions. The patient's head being then kept steady the candle is moved to the right and to the left. If any difference is seen it should be noted as horizontal separation increasing to the right or to the left. The patient's attention is then directed to the difference in level—i.e., the vertical element of the diplopia—and in the same way on raising the candle or lowering it the patient will readily estimate any difference in the level of the two images; a note can then be made that the vertical separation increases upwards or downwards. In determining the variations in the two components of a diplopia it is imperative that the patient's attention be kept to the point; when testing the horizontal separation no remarks about level should be listened to; to the question, "How far is the one candle to the right of the other?" the answer, "The red candle is now sloping," only confuses the observer.

If the vertical component is very small relatively to the horizontal the diplopia can be spoken of as a horizontal one; the action of the affected muscle will be horizontal, and to the right or left according as the diplopia increases to the right or to the left. If the vertical element is greater than the horizontal the diplopia can be spoken of as a vertical one, and the muscle affected will be an elevator or a depressor according as the vertical element of the separation increases upwards or downwards.

3. *The image projected further in the direction of greatest diplopia is formed by the affected eye.* When the candle is moved in the direction in which the diplopia increases the image which moves most rapidly in that direction is the one formed by the affected eye.

Having determined the direction of action of the affected muscle we now find out which eye is affected. The diplopia is due to the lagging of a muscle, and is greatest when the muscle is called on to make its greatest effort. If the candle be placed in that part of the field where the diplopia is greatest the normal eye will be able to follow it and receive its image on the macula, but the affected eye will lag behind and receive an image of the light at a point on its retina remote from the macula in the opposite direction to that of the object. Taking into consideration the relative positions of these two retinal images, it will be apparent that the one in the affected eye cannot be superimposed on the other, but will always be at a point removed from it in the opposite direction to that of the source of light. If now we consider the mental projection of these two images in space, that one due to the eye which lags will always be further in the direction of the object fixed. But this is the direction of greatest diplopia, therefore the image which is further out in the direction of the greatest diplopia is always formed by the affected eye. Having determined the direction of the greatest diplopia we have merely to ask the patient which candle is further in this direction—up, down, right or left—and his answer will indicate the eye which is affected.

If the diplopia be a horizontal one the diagnosis will be complete, for there is only one muscle which moves each eye to the right or to the left. If, however, the diplopia be vertical we have still to decide between two muscles, for each eye can be moved up by the superior rectus or the inferior oblique and downwards by the inferior rectus or the superior oblique.

4. *The separation of the images is greatest when the eye is looking along the line of the tendon of the affected muscle* or when the object is opposite the end of the affected tendon.

Bearing this rule in mind, we have only to recall the direction of the tendons to decide the muscle. We have already determined the action of the muscle and the eye which is affected. If the candle be placed in the two positions in which it would be intercepted by the lines of the two possible tendons, then the vertical separation will be greater when it is on the line of the affected one.

Suppose that the vertical separation increases downwards and the image from the right eye is lower, we have a depressor of the right eye affected. The line of the one depressor tendon—the superior oblique—passes forwards and to the left, and the tendon of the other—the inferior rectus—passes forwards and to the right. The candle is therefore placed in the left lower part of the field, in line with the oblique, and then in the right lower part of the field, in line with the rectus, and the patient is asked in which position is the difference in level greater. His answer will determine the muscle affected.

If a further control of these vertically acting muscles be wished, and the patient appreciates that one candle is inclined towards the other, then the angle of inclination of one image to the other is always greatest when the line from the object to the eye is at right angles to the tendon of the affected muscle.

In the case of a depressor we have to distinguish between the superior oblique and the inferior rectus; and similarly for an elevator between the superior rectus and inferior oblique. For the former pair hold the candle in the lower part of the field, first to the right and then to the left, and ask the patient to say when the inclination is greater. Then placing the candle in the position where the inclination is greatest take a line from it to the eye, and that one of these two muscles whose tendon is at right angles to this line is the one affected. Similarly for the elevators. The line of the superior oblique tendon, of course, is taken as from the pulley to the insertion in the globe.

This method has been found very efficient and has stood the test of three years' application to all the cases of muscle paralysis occurring in two busy hospital clinics. It requires no diagram to be memorised, and calls for the

[1] The expression "diplopia is greater" is used to mean the angular separation of the two images is greater.

minimum of intelligent coöperation on the part of the patient.

The application of these rules to the various muscle paralyses taken in detail is as follows:—

Given a diplopia which increases in one direction we have—

A.—HORIZONTAL DIPLOPIA.

1. Increasing towards the *right*:—
   (*a*) Image formed by the right eye further to the right: *Right External Rectus.*
   (*b*) Image formed by the left eye to the right: *Left Internal Rectus.*
2. Increasing to the *left*:—
   (*c*) Image formed by the left eye to the left: *Left External Rectus.*
   (*d*) Image formed by the right eye to the left: *Right Internal Rectus.*

B.—VERTICAL DIPLOPIAS.

Separation increasing upwards.

1. Right eye's image above:—
   An elevator of the right eye affected.
   (*e*) Vertical separation greater up and to the right than up and to the left: *Right Superior Rectus.*
   (*f*) Separation greater up and to the left than up and to the right: *Right Inferior Oblique.*
2. Left eye's image above:—
   An elevator of the left eye affected.
   (*g*) Separation greater up and to the left than up and to the right: *Left Superior Rectus.*
   (*h*) Separation greater up and to the right than up and to the left: *Left Inferior Oblique.*

Separation increasing downwards.

1. Right eye's image below:—
   A depressor of the right eye affected.
   (*i*) Separation greater down and to the right than down and to the left: *Right Inferior Rectus.*
   (*j*) Separation greater down and to the left than down and to the right: *Right Superior Oblique.*
2. Left eye's image below:—
   A depressor of the left eye affected.
   (*k*) Separation greater down and to the left than down and to the right: *Left Inferior Rectus.*
   (*l*) Separation greater down and to the right than down and to the left: *Left Superior Oblique.*

New Cavendish-street, W.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SURGICAL SECTION.

Benign Tumours (Fibroma, Myoma, Lipoma) Encapsuled in the Wall of the Stomach.—Some Cases of Gastric Surgery.

A MEETING of this section was held on June 8th, Mr. J. WARRINGTON HAWARD, the President, being in the chair.

Mr. WALTER G. SPENCER read a paper on Benign Tumours (Fibroma, Myoma, and Lipoma) Encapsuled in the Wall of the Stomach. He said the connective-tissue tumours of the stomach were commonly sarcomata. There were, however, exceptions to that general statement: a benign encapsuled growth, a fibroma, myoma, or lipoma, might increase to a considerable tumour, and yet could be removed without damage to the stomach. These benign growths had been mistaken for sarcomata and an excessive operation had been done; when left alone, such tumours had caused death by pyloric obstruction, or by ultimately becoming malignant. A case under Mr. Spencer which occurred in a female, aged 46 years, was similar to a tumour of the stomach described by Morgagni. The patient was first seen by Mr. H. G. Barling, who discovered the tumour and distinguished it from the kidneys, which were both moveable in the horizontal plane. When drawn out through the abdominal incision the appearance was that of a perfectly normal stomach containing a soft body of the size and shape of a large kidney. The stomach cavity was quite normal, but the mucous membrane of the posterior wall was pushed forwards, yet was freely moveable over the tumour, which had grown in the submucous tissue. The tumour was easily shelled out and proved to be a dense fibroma of the shape and size of a large kidney, weighing 200 grammes, or 7 ounces. The patient recovered well, and three and a half months after was fit to resume her occupation. Mr. Spencer also showed a museum specimen of a precisely similar tumour, only smaller, the size and shape of a small sausage. But it was placed in exactly the same position, with the convexity downwards and the concavity close to the lesser curvature. It also during life formed a freely moveable abdominal tumour which the surgeon took for an intussusception and cut out the tumour along with the middle part of the woman's stomach. Finding out what he had done, he had to reopen the abdomen to correct the suturing, but the patient died. The tumour was shown *in situ* and was seen to be situated in the submucous layer, encapsuled and separable from the mucous and muscular coats. Under the microscope it had the structure of a myoma or fibromyoma. Reference was made to other cases of encapsuled and pedunculated benign tumours of the stomach; also to specimens in the Museum of the Royal College of Surgeons of England from the horse and cod-fish. Mr. Spencer, in conclusion, said that although it was impossible to diagnose such tumours except at the time of operation, yet benign tumours, either sessile or encapsuled, or pedunculated and easily detached, could be successfully removed without excising any portion of the stomach.—Mr. L. A. BIDWELL said it was interesting to note that a tumour of the stomach might be mistaken for a moveable kidney and described a case in point. He raised the question whether benign tumours ever became malignant.—Dr. H. MACNAUGHTON JONES remarked that malignant degeneration was observed in uterine myomata.—The PRESIDENT suggested that benign tumours became malignant, not from degeneration but from invasion from without.—Mr. SPENCER, in replying, pointed out that the question of benign tumours becoming malignant really resolved itself into a question of terms. A tumour that from an ordinary surgical point of view might be described as benign, might, if submitted to minute histological examination, be found to contain malignant features.

Mr. E. STANMORE BISHOP read a paper entitled "On Some Cases of Gastric Surgery." He said that surgery, as applied to gastric disease, had of late years attracted much attention. The proposal to treat surgically gastric ulcer and its results was comparatively recent, and all records of cases so treated were valuable, whilst the outcome had been, as a rule, so satisfactory that many previously looked upon as incurable or neurotic had been subjected to at least exploratory operations with a view if suitable to more definite procedures. Those explorations had resulted in the discovery of some conditions which were to a certain extent unexpected but which had proved amenable to surgical skill, such, for instance, as hour-glass stomach or early carcinoma, whilst experience had shown that gastric or duodenal perforations were, if attended to without loss of time, by no means the hopeless accidents they were once considered. Of partial gastrectomy there had been six cases. In all, operation was not sought until a well-marked mass was present which could be felt, and in two cases seen. The lump varied in size from a celluloid ball to a tangerine orange. The patients were two males and four females, their ages ranged from 38 to 57 years. All the patients were in very poor condition and had become emaciated; probably that accounted in large measure for the mortality—four out of six. Two survived for a period of 10 and 12 months respectively, but died ultimately: from certain recurrence in one case and from exhaustion with probable recurrence in the other, but that was not verified post mortem. The operation performed in each case was that of Billroth with end-to-end union, and that was followed in two cases by leakage at the angle between the vertical and circular sutures. In all great difficulty was experienced with the clamps. The later method of closing both openings completely and finishing with gastro-enterostomy evidently yielded better results, and was the measure which would probably be adopted generally in future. In the *Annals of Surgery* last year Mayo called attention to a triangular fold of peritoneum descending in certain cases from the duodeno-jejunal angle and losing itself on the jejunum and advised its removal. It would also be in the memory of all abdominal surgeons that a discussion arose some months since as to the correct line of apposition between the two viscera. Might it not be that that fold indicated the proper angle at which the united jejunum should lie, and that so far from removal it should be welcomed as an additional means of strengthening and protecting the line of union? In two of his cases it was observed and used for that purpose. The result was good, and in the later cases the angle so indicated had been followed as nearly as

possible. Another point to which he had as yet seen no reference was the peculiar naked-eye appearance of the first seven or eight inches of the jejunum; that gut, which was the part desired for anastomosis, looked sodden, it had not the polished surface of the rest of the small intestine and was covered by a number of minute eminences; it might contain putty which had been compressed in places, so "moulded" was it. Of course, the surgeon relied mainly upon the fact of its emergence from the duodeno-jejunal opening, upon its anatomical position in fact, to assure himself that it was the coil required, but that was a confirmation which supplied additional certitude and was therefore welcome. He was not sure that that was always the case, but he had seen it in so many that he should confess to a feeling of doubt and uneasiness if it were not recognisable. Another point was the value of the symptom of hunger-pain as a differentiator between gastric and duodenal ulcers. This symptom undoubtedly had great significance, and was of much importance in the differential diagnosis, but he ventured to hint that that differential value might be somewhat exaggerated. In two or three of his cases in which duodenal ulcer was demonstrated at the operation that symptom was absent, whilst in a case sent to him by a well-known physician with a confident diagnosis of duodenal ulcer, based upon its presence, no duodenal ulcer was found, but a typical saddle-shaped ulcer of the lesser curvature of the stomach was present. The operation itself appeared to act very much in the same way with reference to the passage of food through the alimentary canal as perineal section did with regard to the passage of urine through the urethra when a stricture was present; the stricture in that case being at the pylorus, at first all the contents passed through the new opening; the stricture being thus allowed to rest, if not cancerous, slowly yielded; some content began to find its way along the normal route, then more and more, less and less passing through the artificial opening, until at last the normal route became again the only one. Whether the new route in cases of gastro-enterostomy became totally closed, as did the perineal opening, there did not so far appear to be sufficient evidence to prove, but that matters tended in that direction, the x-ray evidence he had been able to obtain seemed to show very definitely.—After Mr. BIDWELL, Mr. C. P. CHILDE, and Mr. SPENCER had spoken, Mr. STANMORE BISHOP replied.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Eye-Strain.—Pharmacology of Ergot.

A MEETING of this society was held on June 2nd, Dr. JAMES RITCHIE, the President, being in the chair.

Mr. GEORGE A. BERRY opened a discussion in a communication entitled "Critical Remarks on the Symptomatology and Causes of so-called Eye-strain." After referring to the vagueness of the term he said that popularly "weakness" might be any symptom such as readily watering, intolerance of light, defective sight or discomfort, and frontal headache induced by reading. "Eye-strain," on the other hand, was a term originated by the medical profession and he did not know of it as distinct from asthenopia; indeed, he preferred the latter term as it was associated with a generic diagnosis. He thought that the bearing which eye conditions had in causing headache had been exaggerated. When there was hypermetropia, or astigmatism, or an absence of complete lateral parallelism of the axes of the two eyes, it did not follow that the deviations from the normal accounted for the patient's complaints as they were too readily assumed to do. Speaking generally, the symptoms which in his opinion indicated eye-strain were due either to irritations of the superficial nerves in the conjunctiva and cornea or to the use of the eyes under conditions which called for a strained relationship between associated impulses as between accommodation and convergence. In the case of superficial irritation it was the summation of minute, long-continued stimuli which caused the actual pain referred elsewhere than to the eyes alone. In other cases the headache might be looked upon more as the effect of the cerebral effort which was required to dissociate nerve impulses. In almost all cases of eye-strain there was also an individually variable element to be considered—namely, the neurotic element. Equal sources of irritation produced different degrees of pain in different individuals or in the same individual at different times. Thus, in health an effort might be made without the conscious appreciation of its being an effort, while in ill health it might be associated with asthenopia. Thus often during convalescence from acute illness, discomfort or pain in the eyes or headache might be experienced for the first time. The most frequent causes of conjunctival and corneal irritation were lid pressure, exposure to strong illumination, and gout. Lid pressure was very often induced by astigmatism, especially if this was one in which the horizontal meridian of the cornea was the most highly curved (as happened in 20 per cent. of astigmatic eyes), when an unconscious effort was made to correct it by pressing the lids on the eye. Generally this could only be done by frowning. The pressure induced irritation of the cornea leading by summation to the sensation of frontal strain and headache. Most people who have walked in the glare of the sun have experienced this headache as a result of the frowning and semiclosure of the eyes. Many astigmatics have found out that their vision can be improved by pressing the finger-tip on the eyeball. The ophthalmometer revealed in many cases the change which lid pressure produced on the cornea. The headache induced by lid pressure arose mainly when the eyes were focussed on near objects. Lid pressure was only resorted to in the lower degree of astigmatism because headaches did not accompany the higher degrees of this affection. Asthenopic symptoms from the superficial irritation caused by strong illumination were very common and were due to the effect of the ultra-violet rays. The eyes were usually protected from such rays by being directed to the green of grass or trees which absorbed the rays. The symptom set up by such strong light as sunlight, reflection from white paper, incandescent gas or electric light was not generally headache but smarting of the eyes when reading and inability to continue reading for long. The symptoms quickly disappeared when the patient was kept in a darkened room, but such treatment was both unnecessarily irksome and even hurtful. All that was necessary was to protect the eyes from the rays by special glasses, the best of which was called "euphos," but "London smoke" glasses afforded a sufficient protection and allowed the patient to live in sunlight. When there was astigmatism the use of cylindrical glasses became necessary but they were only required for reading or other near work if headaches were present. Another form of eye-strain was technically called asthenopia accommodativa. The most frequent cause of this kind of headache was hypermetropia and it was aggravated by reading with insufficient light. Reading in bed was often hurtful because the illumination was obtained from a single feeble candle. Myopic conditions were easily recognised, and hence the symptoms complained of could be treated. Early and full correction for reading until after the age of full growth was now generally recognised to be right. In what has been called asthenopia nervosa the patients were, in fact, hysterical and treatment by suggestion was advisable. Mr. Berry had found the subcutaneous injection of sterilised water over the eyebrows was most efficacious, and the use of dark glasses must be forbidden. Not more than three or four injections should be given.—Dr. GEORGE MACKAY said that the personal equation in eye-strain was remarkable. Some individuals with very marked errors of refraction never suffered from headache, while in other cases with very slight errors the disability owing to headache was intense. The employment of a very weak prism often afforded remarkable relief.—Dr. W. G. SYM said that an endless number of diseases, including sterility, diabetes, and appendicitis, were supposed by some to be due to eye-strain. He thought that Mr. Berry had made too much of the lid-pressure theory.

Dr. ALEXANDER GOODALL read a paper entitled "A Pharmacological Estimate of the Value of Commercial Samples of the Liquid Extract of Ergot with Notes on Ergot Standardisation." He said that in the case of some drugs whose active principle was recognisable a chemical standard was laid down by the British Pharmacopœia, but in cases where no chemical assay was possible that official publication gave no guidance. It had been found, however, by many firms of manufacturing chemists that it was in their interest to employ a pharmacological test for some of their products, and in the case of certain substances there now existed ample data to afford standards. Well-known examples

were the tinctures of digitalis, strophanthus, and squill, and the preparations of adrenalin and cannabis indica. The position regarding ergot was different. Its therapeutic effects were notoriously uncertain, and its chemistry was in a state of chaos. There was no general agreement regarding its pharmacological action, and there were no very satisfactory data to afford guidance in attempting to fix a pharmacological standard. Added to all this was the fact that ergot preparations tended to lose their activity very rapidly. Among the methods of standardisation employed were: (1) depth of blue produced in the cock's comb; (2) the effect on the blood pressure in pithed or in anæsthetised animals; (3) the reversal of the effects of adrenalin; and (4) the effect upon the isolated uterus. The first method consisted in injecting fluid extract of ergot into fowls or feeding them with an ergot preparation. If the preparation was active the comb and wattles became blue and cold. The method was not a certain one. There was evidence that toxic effects and even gangrene might be caused without any effect being necessarily produced on the contraction of the vessels or visceral muscle elsewhere. The second method consisted in injecting a fluid preparation intravenously and noting the effect on the blood pressure of a pithed or anæsthetised animal. In this way it was quite possible to increase the blood pressure in a cat by 20 or 30 millimetres of mercury. The third method was introduced by Dale, who said that he had found it apply in particular to a base which he had isolated and called ergotoxin. Stated briefly, the method depended upon the fact that if adrenalin be injected into an animal during the rise of pressure caused by ergotoxin it would cause a fall of pressure, but Dr. Goodall had not been able to obtain satisfactory results with preparations stated to be standardised by this method. The fourth method depended on the effect of ergot in Ringer's solution on the isolated uterus, and had been commended as an excellent means of standardisation. Dr. Goodall at first considered that the effect upon the blood pressure seemed to be the simplest and most accurate. Observations were accordingly made upon rabbits and cats under full anæsthesia by ether. The readings were taken from the carotid artery. The injections were made into the jugular vein. The results have been classified in three series—namely: (1) the effect on the blood pressure produced by special samples of ergot; (2) the effect on the blood pressure produced by ordinary commercial samples of ergot; and (3) combined observations of the effects produced on the blood pressure and on the uterus. The observations in Series 1 were made with samples submitted to Dr. Goodall by manufacturing chemists to be tested physiologically, so that these samples were probably made from carefully selected ergot. In every case there was a fall of blood pressure succeeded by either a return to normal or a rise above it. The results given by the last 17 specimens showed an average fall of 39·4 millimetres of mercury, followed by an average rise of 20·5 millimetres above normal. As regards pressor action—i.e., the subsequent rise above normal—five specimens had no effect and five caused a rise of 30 or more millimetres. In other words, 70 per cent. failed to cause a rise of 30 millimetres and 41 per cent. failed to cause a rise of 20 millimetres. In Series 2 use was made of samples of liquid extract of ergot obtained from well-known houses in London, Edinburgh, and elsewhere. The collective result was that 76 per cent. of these commercial samples failed to raise the blood pressure 20 millimetres of mercury. In Series 3 the combined effects on the blood pressure and on the uterus were observed. Of the 21 samples employed, 14 caused a satisfactory contraction of the uterus in doses which did not necessarily raise the blood pressure, while four samples caused a slight contraction, and only three failed to affect the uterus. This means that 66 per cent. of the samples caused a well-marked uterine contraction, and that 85 per cent. caused a contraction of some sort. The most striking phenomenon of the three series was the absolutely constant fall of blood pressure which followed immediately upon an intravenous injection. It was stated by Dixon that this fall was due to impurities and that it did not occur if the ergot was injected subcutaneously. The question of the absorption of ergot did not come within their purview, but there could be no doubt that the pharmacology of ergot would remain unsatisfactory until a means of separating the depressor constituents had been discovered. The rise of pressure which followed the fall was not nearly so constant, but it might have been that in many experiments the depressor and pressor substances balanced each other. A sample of ergot which caused a rise of blood pressure also caused contraction of the uterus, but a sample which caused no rise of blood pressure might nevertheless cause a satisfactory uterine contraction. Samples of ergot might cause contraction of the uterus in smaller doses than were required to raise the blood pressure. Ergot therefore appeared to have a specific action on the uterus. Dr. Goodall considered that the effect on the blood pressure was a satisfactory pharmacological test as far as the prescriber was concerned. A fair standard was that a dose not greater than 20 minims injected intravenously should cause a rise of blood pressure of 20 millimetres of mercury in an anæsthetised animal weighing 1500 grammes. On the other hand, since 42 per cent. of the commercial samples caused contraction of the uterus without effecting a rise of blood pressure, the action on the uterus might be regarded as a more satisfactory test by the manufacturer, and in view of the almost exclusive use of ergot in uterine conditions might be considered sufficient by the prescriber.

ROYAL ACADEMY OF MEDICINE IN IRELAND.—A meeting of the Obstetrical Section was held on May 21st, Mr. E. H. Tweedy, the President, being in the chair.—The President exhibited specimens of Fibroids with red degeneration, removed six weeks after delivery. The woman had been sent to him six months pregnant and with a large myoma. He kept her over two months in hospital. He induced labour at full term. The child was dead. On the third day her temperature and pulse rose, and on the fourth day the temperature reached 103° F. There was great tenderness of the abdomen and he became very uneasy about the case. He asked Sir William Smyly to see her in consultation on the fifth day with a view to immediate operation. Sir William Smyly advised postponement of the operation and the woman got gradually better. When her temperature became normal he removed the tumour by supra-vaginal hysterectomy. It showed in a very characteristic manner red degeneration, which was a disease that apparently very rarely occurred save in pregnancy. High temperature was a constant symptom of red degeneration, and this he thought might arise apart from a germ invasion and be due to absorption of toxic matter from the degenerating myoma.—Dr. R. D. Purefoy said that the change noticed in one of these tumours was one of the least common forms of degeneration and one of which they knew least. He was not quite convinced that the temperature was due to the red degeneration. He was inclined to think that it was connected with a certain degree of localised sepsis.—Dr. H. Jellett said he was watching a patient who came to him six months pregnant with a large myoma below the fœtus, filling the pelvis. The patient had been going on very well since. In such a case, where there was a large myoma on the posterior wall of the uterus, filling the hollow of the sacrum, and in which the cervix was jammed above the symphysis, he would like to know how long Mr. Tweedy would allow her to remain in labour. Sometimes tumours that were firmly impacted did get drawn up, but in his case it seemed rather hopeless to expect the tumour to do so.—Dr. R. J. Rowlette said there were certain points about red degeneration which were fairly fixed. It was commonly found associated with pregnancy, and seldom in other conditions. In almost every myoma associated with pregnancy which he had seen there had been more or less red degeneration. It was certainly a necrotic change of some sort, as the tissue failed to stain. In pregnancy the entire tissue of the uterus was in a highly vascular condition, and something interfering with the blood-supply, causing stasis in the veins, might cause a diffusion of blood pigment. There was no doubt that in some cases the red degeneration might give rise to temperature, as it was liable to be affected by septic or putrefactive organisms.—The President, in reply, said the fibroids were chiefly situated on the fundus, but also encroached on the lower uterine segment. It was only when he became convinced that the growth had undergone degeneration that he determined not to let the patient run the risk of another pregnancy. He thought Dr. Jellett's case was plain sailing. His patient should not be allowed even to fall into labour. He should calculate the time of full term and perform Cæsarean section. After removing the child it would be easy to remove the uterus. The myoma was almost certain to degenerate if she was

allowed to fall into labour. He thought there was a toxin that could raise the temperature apart from germ invasion.—Dr. Purefoy read a paper on Some Pathological Conditions of the Urethra.—Dr. B. A. H. Solomons read a paper entitled "A Case Illustrating the Toxæmia of Pregnancy complicated by Rupture of the Uterus."—The President and others discussed the paper and Dr. Solomons replied.

Reviews and Notices of Books.

Further Advances in Physiology. Edited by LEONARD HILL, M.B. Lond., F.R.S. With diagrams. London: Edward Arnold. 1909. Pp. 440. Price 15*s.* net.

THIS volume is the sequel to "Recent Advances in Physiology" by the same editor, and deals with certain branches of the science other than those dealt with in that volume. The aim of the editor and his coadjutors has been to record their views on certain selected subjects which have a particular application to pathology and clinical medicine—e.g., problems concerning the circulation and respiration, the neuro-muscular system, and vision. To each subject is appended a bibliography of recent works on that subject.

Professor Benjamin Moore writes on the Equilibrium of Colloid and Crystalloid in Living Cells (pp. 1–33). It is a dissertation on chemico-physical matters, including a discussion of that excessively complex physico-chemical aggregate called protoplasm or bioplasm and its essential constituents the proteins. The importance of the inorganic ions for cell life and activity is set forth. The relation of nutrient fluids to the heart beat is admirably discussed, and the paramount importance of ions of the inorganic salts which, while they have a loose union with the proteins, possess such freedom of movement that they give to the solution in which they exist many of the more important physico-chemical properties of a saline solution. The author concludes "that neither osmosis nor any other physical hypothesis which leaves out the peculiar and varying chemical constitution of bioplasm can yield an explanation of absorption, secretion, or excretion," and that "the unstable unions between bioplasm and dissolved substances furnish the key to many of the intricate problems both of physiology and of practical medicine."

Dr. Martin W. Flack's essay on the Heart (pp. 34-71) deals with its histology and morphology and with the nervous elements of the vertebrate heart. The heart musculature is now known to be of the nature of a syncytium. The *a.-v.* bundle, of course, receives special attention. "The evidence that the *a.-v.* bundle is the sole passage of conduction is tolerably strong" (p. 61). The peculiarities of cardiac muscle as contrasted with skeletal muscle are set forth in detail. The relative merits of the myogenic and neurogenic theories of the heart beat are critically examined, but Engelmann's terms, "chronotrop," "inotrope," do not seem to be introduced, while in connexion with the revival of apparently dead hearts after many hours we do not find the name of Kuliabko. There is also a careful study of the heart *in situ*. "Pulse Records in their Relation to the Events of the Human Cardiac Cycle" (pp. 72–111) are reviewed by Dr. Thomas Lewis. The author insists on the value of graphic curves taken simultaneously from different pulsating parts. The venous pulse in man and animals is fully studied, and a minute study is made of the auricular pressure curve and the jugular pulse tracing. Wenckebach on occasion is printed as "Wenchebach" in this essay.

The editor's chapters on "The Vascular System and Blood Pressure" (pp. 112–181) are both interesting and controversial. In Pawlow's laboratory the establishment of what is called Eck's fistula—i.e., joining the portal vein and vena cava—was the prelude to the more heroic work of Carrel, Guthrie, and others in America, which has opened up a new field in experimental work. The carotid has been stitched by Carrel to the external jugular vein, and the circulation in the thyroid gland reversed with no ill consequences. A length of the carotid artery of a dog has been kept in normal saline solution at 32° F. for 20 days and then successfully transplanted in the course of the abdominal aorta of a young cat, and on the seventy-seventh day the animal was in perfect health. He who wishes to read the Romance of Surgery will find it in the *Journal of Experimental Medicine*. The experiments were made at the Rockefeller Institute, and of Carrel's paper on "Transplantation in Mass of the Kidneys" a *résumé* with illustrations is given by Dr. Hill.

Dr. Hill also recounts fully the recent experiments on the contractility and elasticity of arteries, of arterial, venous, and capillary pressures in man, and the methods of measuring them; and especially does he dwell on the factors that cause increased tension in organs enclosed in capsules, which leads him to the consideration of glaucoma and intracranial and other pressures. He finds that a pressure of from 10 to 20 millimetres of water are sufficient to overcome the capillary pressure in the arm placed at the heart's apex level (p. 142). We would call attention to the importance attached by Dr. Hill to muscular movements in connexion with the circulation, and we can do so best by quoting his own words:—

> The function of the heart is to drive the blood into the capillary bed; the function of the arterioles is to regulate the distribution and switch the current on to one or other part of the capillary bed and limit the pooling of the blood under the stress of gravity; the function of the skeletal muscles and respiratory pump, aided by the valves in the veins, is to drive the blood back from the capillary bed to the heart, to prevent hypostatic congestion, and to act as a pump to the vascular system of no less importance than the heart. The respiratory pump even may drive the blood through the right heart and lungs.

The effect of mental work on blood pressure and the importance of muscular exercise in the cure of irritable dyspepsia of brain-workers are considered. Dr. Hill then deals drastically with the present filtration hypothesis relating to lymph formation, œdema, and dropsy. Plethora, hydræmia, hyperæmia, shock, and collapse are next considered. The whole essay is worthy of careful study.

Dr. Arthur Keith writes an excellent monograph on "The Mechanism of Respiration in Man" (pp. 182–207). It is a telling example of how the study of what is apparently common-place in matters of anatomy may be made to shed new light on physiological problems. The author gives a summary of 16 points with which he deals; among his conclusions being that:—the expansion of parts of the lung are unequal, and the most expansible parts are the infundibula; the bronchial muscle regulates the tension of the infundibular air; the roots of the lungs are not fixed as is generally held; the great fissure of the lung is of functional importance; expiration is controlled by muscular action; and the diaphragm acts as a piston. We notice the author uses the term "Rontgen" instead of "Röntgen."

Dr. M. S. Pembrey's chapters on the Physiology of Muscular Work (pp. 208–257) are both interesting and practical. He is right in insisting that we ought to study the muscular activity as a whole as regards speed, endurance, and strength, as in athletes, and make more use of the results of trainers of men and animals. The effects of muscular work on the different functions of the body are fully considered. Some chapters on the Physiology of Nerve, by Dr. N. H. Alcock (pp. 258–283), will appeal more to the physiologist than to the practitioner; still the remarks on regeneration of nerves will have a special interest for the latter. We should like to have seen a fuller account of Head's work on section of nerves. We notice that the word "zincatine" is retained, and the term a "wave of zincatinity" is used.

Perhaps the most "revolutionary" chapter of all is that of Dr. J. S. Bolton on Recent Researches on Cerebral Localisation (pp. 284–350). A full account of the significance of cerebral lamination is given, including the superb work of Campbell, Brodmann, and others. The functions of the different cell laminæ are discussed, and the use of histology as a method of cortical localisation. Full credit is given to the researches and generalisations of Flechsig; nor is the early work of Bevan-Lewis and Clarke and the later work of John Turner forgotten. One of Dr. Bolton's most interesting chapters is that on the higher functions of the cerebrum. The classical views of aphasia and the time-honoured localisation of the motor speech centres in Broca's convolution have recently been assailed by Marie and Monakow. Physiologists and physicians should read and ponder well this comparison and critical dissection of the older and newer views on aphasia. They would do well also to study the discussion on language and on "alteration of personality." The Studies in Special Sense Physiology (pp. 351–425) by Mr. M. Greenwood deal with (1) visual adaptation, and (2) colour-blindness. The principles of the two modern theories of vision are considered and criticised; there is also an interesting historical introduction, including the speculations of the Greek philosophers on vision.

We cordially commend this work alike to physiologists and to medical men. It is at once scientific and suggestive, while the problems with which it deals so successfully are amongst the most interesting and practical that can engage the attention of all true students of medicine.

A System of Medicine by Eminent Authorities in Great Britain, the United States, and the Continent. Edited by WILLIAM OSLER, M.D. Oxon. and McGill, F.R.S., Regius Professor of Medicine in the University of Oxford, Honorary Professor of Medicine in the Johns Hopkins University, Baltimore; assisted by THOMAS MCCRAE, M.D., F.R.C.P. Lond., Associate Professor of Medicine and Clinical Therapeutics in the Johns Hopkins University, Baltimore. Vol. V., Diseases of the Alimentary Tract. London: Henry Frowde and Hodder and Stoughton. 1909. Pp. 903. Price 30*s.* net.

IN this volume of 903 pages is contained a series of monographs giving a most complete and erudite account of the diseases of the alimentary tract.

The first chapter is written by Dr. C. G. Stockton (Buffalo) and is headed Introductory Discussion on the Diseases of the Digestive Apparatus. Certain critical relations are described that may exist between disturbed physiological activity and structural changes as expressed in morbid processes. Dr. Stockton points out that digestion is frequently looked upon as the function of an extensive and complicated apparatus, but it is so intimately related with the functions of other parts of the body that it is difficult to draw lines of precise limitation beyond which it can be said that digestion has no part and from which it receives no reciprocal activity. The digestive apparatus is commonly spoken of as including the alimentary tract and those important glands which contribute specific secretions to the advancement of digestion; but as absorption and assimilation, on the one hand, and the formation and withdrawal of catabolic and waste products, on the other, are so immediately related to the preliminary digestion, it is impossible to form a clear conception of the diseases of the digestive organs without taking into consideration the state of other and contributing parts of the organism. The author then draws attention to some physiological points in what he terms the interrelation of digestive functions. Common experience teaches that the mental state and the sense of taste in some unknown way affect the primary digestion. Thus worry induces leanness, and happiness favours the opposite condition, in a measure independently of the amount of food taken. Further, the digestive secretions and the motor activity of the stomach and intestine are excited by proper psychical stimulation, and some of them inhibited, others over-excited, by distress. Several similar examples are given of the effect of other organs on the digestive organs, indicating the necessity of taking a broad view of the whole mechanism of the body when digestion is at fault.

Chapter II. is occupied with a consideration of diseases of the mouth and salivary glands, the author being Dr. D. Riesman (Philadelphia). A good account is given of the various affections of the mouth, especial attention being given to leukoplakia.

Diseases of the œsophagus are described by Dr. T. McCrae (Baltimore). Carcinoma of the œsophagus is considered at length and the frequency with which perforation is met with is noted. This complication may take place into different organs or areas, depending upon the site of the growth, but in by far the greatest number the ulceration occurs into the large air passages, the larynx, trachea, or a bronchus; apart from these situations it may occur into the mediastinal tissue, the pleura, the lung, or even, although a rarity, into the pericardium.

Functional diseases of the stomach are considered by Dr. Julius Friedenwald (Baltimore). The conditions of hyperchlorhydria, gastrosuccorrhœa, gastromyxorrhœa, gastralgia nervosa, achylia gastrica, and neurasthenia gastrica are described in an admirable manner. The symptoms and diagnosis are carefully discussed, and numerous useful hints are given in regard to therapeutics. Diet naturally holds an important place in the treatment of all these conditions, and the nature of the food which should be given is accurately and minutely laid down. The drugs which may prove useful are also indicated. In speaking of the preparations which may be employed in hyperchlorhydria Dr. Friedenwald remarks of the alkalies that may be useful in neutralising the excess of acid, that the bicarbonate of soda, calcined magnesia, magnesia carbonate, calcium carbonate, and the phosphate of soda are most frequently prescribed, and that calcined magnesia has an advantage over bicarbonate of soda, as the former neutralises four times as much acid as the latter; it has the additional advantage that it is distinctly laxative, and is therefore especially useful when constipation is present.

Dr. C. F. Martin (Montreal) is responsible for the chapter on organic disease of the stomach. Commencing with gastric and duodenal ulcer, he dwells at length on the pathogenesis of the former, but arrives at general conclusions only—namely, that gastric ulcer occurs wherever gastric juice flows, that the process in its earliest stages is essentially a necrosis, and that healing is prevented in some way by the action of the gastric juice. He also discusses the relationship of the circulatory system to this disease, but without expressing any definite opinion. He seems to indicate that neither embolism, hæmorrhagic erosions, nor submucous hæmorrhages satisfactorily explain the formation of ulcer. In regard to the neuropathic theory which has been advanced, Dr. Martin believes that beyond lowering the resisting power of the tissues of the stomach and also inducing hyperacidity, there is little connexion between injury of the nervous system and production of gastric ulcer.

The pathology of cancer of the stomach is fully described. It is pointed out that the growth is nearly always primary, secondary involvement being rare. Most practitioners will agree with the statement that there is no one pathognomonic sign of cancer in this site. The diagnosis must be made from the symptom and sign complex. Reference is naturally made to the secretory power of the stomach in cases of malignant

disease of that organ, for it has been asserted that absence of hydrochloric acid is characteristic of that condition. Dr. Martin, however, points out that the absence of this acid is but one sign and of partial importance only, for the same phenomenon occurs in gastric neuroses, catarrh, and atrophy of the stomach, and also in the course of fevers and constitutional disturbances. On the other hand, he remarks that although the presence of lactic acid is not pathognomonic of cancer and may be present in intestinal obstruction, sometimes even in benign pyloric stenosis and other conditions, nevertheless its early appearance in cancer, together with a diminution of the total acidity even before any signs of stenosis, is very important.

Diseases of the intestine are described by Dr. Alfred Stengel (Philadelphia). A full and complete account is given of the chief intestinal affections, whilst brief reference is made to the less common ones, such as sprue, epidemic gangrenous proctitis, and others. One of the most striking features of this portion of the work is the manner in which the differential diagnosis of the principal diseases is discussed. The diagnosis of abdominal affections is often a matter of great difficulty, and Dr. Stengel's remarks are worthy of careful study. Much useful information will be derived by reference to them and some of the remarks are quite illuminating.

Dr. H. D. Rolleston (London) writes on diseases of the peritoneum. He makes some interesting observations on the natural resistance of the peritoneum against disease. He points out that the defensive powers of the membrane consist in (1) the great absorptive power of the peritoneum, by means of which invading organisms are carried away before they can multiply *in situ*, produce toxins, and so set up inflammation (it should, however, be noted that this absorptive power may lead to a general infection or toxæmia); (2) the phagocytic action exerted by endothelial cells, polymorphonuclear and other leucocytes; and (3) the bactericidal and antitoxic power of the peritoneal fluid. The section on subphrenic abscess will be found interesting. 11 causes of simple subphrenic abscess are tabulated, appendicitis being set down as the most frequent. The condition is one which is not infrequently missed and any information upon the physical signs that might help us in diagnosis is welcome.

A chapter by Dr. T. R. Brown (Baltimore) is devoted to a description of splanchnoptosis. The author considers this term preferable to enteroptosis, since the latter word simply means descent of the intestine, whilst the former may be taken to signify descent of any or all of the abdominal viscera. In describing the displacement of the individual organs special terms are used, such as nephroptosis, gastroptosis, and so on. Dr. Brown also remarks that in the earlier days nephroptosis, being much more easily recognised, was regarded as the most important feature, and to it were ascribed the protean symptoms often met with, while later investigations with better methods of diagnosis have shown that the displacement of the kidneys is usually associated with the displacement of the stomach, intestines, &c., and that many of the symptoms originally ascribed to floating kidney are in reality referable to displacement of other organs. This statement may perhaps explain the failure of operative measures which sometimes follows attempts made to give relief to floating kidney.

Diseases of the pancreas are considered by Dr. E. L. Opie (New York). The interesting condition, acute hæmorrhagic pancreatitis, receives full attention.

The last chapter in the book is by Dr. A. O. J. Kelly (Philadelphia) and deals with diseases of the liver, gall-bladder, and biliary ducts. An excellent account is given of cholelithiasis, the remarks on treatment being particularly worthy of attention.

We have perused this volume with pleasure. Much of the information which it contains is most valuable and we can cordially recommend the work to our readers. The subjects with which it is concerned are constantly met with in the ordinary course of practice, and many present great difficulties in the way of diagnosis and treatment. The principal feature of the work is the practical manner in which the authors of the various articles have dealt with the conditions which they have described. Theoretical considerations have not been neglected, but the symptomatology, diagnosis, and treatment have invariably been most fully and satisfactorily discussed; hence as a work of reference this volume will prove especially valuable.

Manual of Diseases of the Ear, Including Those of the Nose and Throat in Relation to the Ear. By THOMAS BARR, M.D. Glasg., Lecturer on Diseases of the Ear, University of Glasgow; and J. STODDART BARR, M.B., Ch.B. Glasg., Assistant Lecturer on Diseases of the Ear, University of Glasgow. Fourth edition, with three coloured plates and six illustrations. Glasgow: James Maclehose and Sons. 1909. Pp. 477. Price 14*s*.

WE have already had reason, when reviewing the previous editions of Dr. Thomas Barr's work, to speak of it in laudatory terms, and we have great pleasure in saying that we have still more reason to speak well of this volume. In the chapter on General Symptomatology there is a fairly full dissertation on the disturbances of equilibrium, and in referring to this symptom further on in the book it is stated that more experience is necessary with regard to Bárány's experiments. Although these experiments are alluded to, there is no detailed instruction given as to their employment, an omission which we regret, and trust that it will be remedied in the next edition. Otomassage is introduced for the first time in this edition—that is to say, if by that term nothing more is understood than the results obtained by the use of Delstanche's pneumatic tractor. Wilde's incision is still recommended in suitable cases; and although it must be admitted that this is not the usual teaching, yet it is a point upon which it is more than probable that there would be justifiable diversity of opinion. The portion of the book devoted to operations is extremely clear and well written. The section on Diseases of the Nose and Throat in Relation to Diseases of the Ear is somewhat altered, but not materially so; while that on Labyrinthine Suppuration has been very carefully brought up to the present date. As an addition in this issue three plates have been inserted each showing 15 coloured drawings of ear drums, with a detailed description. These will be extremely useful to students, some of them being particularly fine examples. The book has lost nothing by the inclusion of Dr. Stoddart Barr in the editorship. It is a splendid text-book and admirably written, and the rapidity with which successive editions appear shows well its popularity.

La Renaissance de l'Ophtalmologie. By Dr. JULIUS HIRSCHBERG, Professor of Ophthalmology in the University of Berlin. Translated from the German by Dr. DANIEL VAN DUYSE, Professor of Ophthalmology in the University of Ghent. With 12 figures in the text and seven plates. Leipzig: Wilhelm Engelmann. 1908. Pp. 147. Price 6 marks.

THIS brochure, dedicated to the Academy of Medicine of Paris by the author and translator, comprises the section on the renaissance of ophthalmology in the eighteenth century in the second edition of the great Graefe-Saemisch Handbook of Ophthalmology. It is fitting that the history of the period which is distinguished by the pre-eminence of Daviel, the originator of extraction as the mode of election for the treatment of cataract, should appear in French guise. Moreover, it is a period of consuming interest for ophthalmologists,

hardly less for Englishmen than for their French *confrères*, and many who find it difficult to read German will be grateful to Dr. van Duyse for his admirable translation. It lacks the bibliographies of the original and some of the notes; in the copy sent to us for review the last plate is also wanting.

The work is divided into three chapters—on the controversy as to the nature of cataract, on the operation for artificial pupil, and on the extraction of cataract. It is shown that Werner Rolfinck established anatomically the seat of cataract in the lens in 1656, thus confirming the opinion and perhaps the direct observation of François Quarré, a Parisian surgeon. At this period the lens was regarded as the seat of vision, and it was utterly heterodox to imagine that sight could be retained if it was injured or diseased. Hence a great controversy arose, the majority of surgeons retaining the old view that cataract was an opacity in front of the lens, which at that time was thought to be situated much farther back in the eye than is actually the case, the intervening space forming the posterior chamber. The struggle reached its climax in the early part of the eighteenth century, when a French surgeon, Brisseau the younger, re-discovered the truth and published it to the world in a small treatise on cataract and glaucoma in 1709. The famous Antoine Maitre-Jan subsequently made the same observation, apparently independent of Brisseau, since he does not mention his name. The first engagement in the campaign took place in the French Academy of Sciences and was notable for the conversion of Saint Yves. The greatest opponent of the theory, however, was the extraordinarily clever and unscrupulous Thomas Woolhouse, a man whose only rival in brilliancy, audacity, and charlatanism in the early history of ophthalmology is his compatriot Taylor. In France, besides Saint Yves, the new view was supported by Morand and François Pourfour du Petit, whilst strenuous adherents were found elsewhere—Heister, the illustrious anatomist and surgeon, in Germany; the not less illustrious Boerhaave in Holland; Valsalva, Morgagni, Benevoli, and Cocchi in Italy; and Cheselden, not to mention John Taylor, in England.

Cheselden, one of the glories of St. Thomas's Hospital, has left his mark on ophthalmology as the inventor of the operation for the formation of an artificial pupil. His first communication appeared in the Philosophical Transactions of the Royal Society in 1728, and dealt with the division of the "contracted" iris with a needle. Further observations on the subject were published in the fourth and subsequent editions of his anatomy. Cheselden and his pupil Sharp called the operation simply "incision through the iris," but it soon obtained the more dignified, if also more pedantic, name coremorphosis (pupil-formation). It is almost with regret that the honour of suggesting the procedure must be attributed to Woolhouse (1711). The second method of establishing an artificial pupil, by the excision of a cuneiform segment of the iris—iridectomy—is due to Joseph Beer of Vienna (1798). Even the production of an iridodialysis was advocated by Scarpa and others for the same purpose, but rapidly fell into disrepute. Iridencleisis, the incarceration of the iris in a corneal or scleral wound with a view to dragging the pupil to one side, was employed by Adams (1812), Himly, George Critchett, the elder Pagenstecher, and others. Patients on whom this operation has been performed are occasionally met with to-day, but unfortunately the eyes were liable to become inflamed and sympathetic ophthalmia not infrequently ensued.

The account of the introduction of extraction as the routine method for dealing with senile cataract will doubtless prove the most fascinating part of this record. It had been suggested by Steven Blankaart in 1688, and actually employed for lenses dislocated into the anterior chamber by Saint Yves and Petit in Paris in 1707 and 1708. The honour of introducing the operation for senile cataract and placing it upon a sound basis belongs without doubt to Jacques Daviel, whose first publication appeared in the *Mercure de France* in 1748. His chief publication was a communication to the French Academy of Sciences in 1752. Dr. Hirschberg and Dr. van Duyse have reproduced it in extenso, and ophthalmologists will read with profound interest this landmark in the history of their profession. In his earliest operations Daviel made a section which included the lower two-thirds of the cornea and followed the apparent corneo-scleral margin. The incision was commenced with a lance-shaped knife and completed with curved scissors. The flap was turned upwards with a spatula and the lens capsule opened with a needle. The lens was expressed by pressure with the finger on the lower lid. Later the section included only half the circumference of the cornea, and still later experiments were made with a triangular flap. The battle was not yet won. The new procedure demanded manipulative ability which every surgeon did not possess. A wave of reaction followed, abetted by Percival Pott and B. Bell of Edinburgh, though strongly opposed by Jonathan Wathen and James Ware amongst English surgeons. The final victory was ushered in by Joseph Beer, Frederick and Edward Jäger, Rosas, Fischer, Arlt, and Hasner, all members of the Austrian school: Sichel, a pupil of Frederick Jäger, carried it into France, where it was driven home by his pupil Desmarres. The subsequent history of the operation is too familiar to need recapitulation, dealing as it does with improvements of technique introduced by the modern school of ophthalmology which had its rise in von Graefe.

It will be gathered from our *resumé* that this book is one which every ophthalmologist will peruse with pleasure and profit, though it will be a matter for regret that English surgeons play no very creditable part in the story.

LIBRARY TABLE.

A Reference Handbook of Gynecology for Nurses. By CATHARINE MACFARLANE, M.D., Gynecologist to the Women's Hospital of Philadelphia. London and Philadelphia: W. B. Saunders Co. 1908. Pp. 150. Price 6*s.* net.—In this little book the authoress has attempted to set clearly before her readers the main facts in regard to gynæcological nursing which it is necessary for nurses to know. A short account is given of the commoner gynæcological affections, and then the preparation of a patient for an operation, the details of the duties of the nurse during the operation, and the after-treatment of the case are all considered. To help the memory illustrations are given of all the instruments required for the various operative procedures. The recommendations upon the whole are good and accurate, the author has evidently taken a good deal of pains to express herself clearly and succinctly, and the book should prove of value to those nurses for whom it is intended. English nurses engaged in this class of nursing may refer to it with advantage.

Aids to Obstetrics. By SAMUEL NALL, M.B. Cantab., M.R.C.P. Lond. Revised by C. J. NEPEAN LONGRIDGE, M.D. Vict., F.R.C.S. Eng., M.R.C.P. Lond. Seventh edition. London: Baillière, Tindall, and Cox. 1909. Pp. 193. Price 2*s.* 6*d.* net.—Dr. Nall's "Aids to Obstetrics" is too well-known a book to require much notice on our part. It has been of assistance to hundreds of students, and although as a rule we do not regard with favour cram-books of any kind, yet so long as a demand exists for them it is important that it should be satisfied so well as it is by this little book. In the production of this the seventh edition the author has secured the coöperation of Dr. Nepean Longridge, and the

book appears to have been revised well and brought up to date.

JOURNALS AND MAGAZINES.

The Quarterly Journal of Microscopical Science. Edited by Sir RAY LANKESTER, K.C.B., F.R.S., with the coöperation of ADAM SEDGWICK, M.A., F.R.S., SYDNEY J. HICKSON, M.A., F.R.S., and E. A. MINCHIN, M.A. With lithographic plates and text figures. London: J. and A. Churchill. New series, No. 211 (Vol. LIII.), Part 3. May, 1909. Subscription per volume of four parts, 40*s.* net.—This part contains the following articles:—1. Studies on the Structure and Classification of the Digenetic Trematodes, by William Nicoll, M.A., D.Sc., of the University of St. Andrews, with two plates. Many of these studies deal with new genera and species of this interesting group of parasitic worms. Amongst them are Stephanophiala laureata, found in the intestine of Salmo fari, and S. transmarina in the intestine of Salmo mykiss; Lebouria idonea in the intestine of Anarrhichas lupus, and L. obducta in the intestine of Bairdiella chrysura; Cainocreadium labracis in the intestine of Labrax lupus and Peracreadium genu in the intestine of Labrus bergylta; Fellodistomum agnotum in the gall-bladder and duodenum of Anarrhichas lupus; Steringophorus cluthensis in the intestine of Pleuronectes microcephalus; and Plagiorchis notabilis in the intestine of Anthus obscurus and Motacilla flava; each of these is more or less fully described. A table shows the chief comparative differences between the six genera of Allocreadiinæ. Two plates illustrate the text. 2. On the Anaspidaceæ, Living and Fossil, by Geoffrey Smith, Fellow of New College, Oxford, with two plates and 62 figures in the text. The Anaspidaceæ are shrimp-like animals found in freshwater pools in Tasmania and similar creatures have been obtained from the Permian—carboniferous measures. 3. On the So-called "Sexual" Method of Spore Formation in the Disporic Bacteria, by C. Clifford Dobell, Fellow of Trinity College, Cambridge. The author thinks that, in the disporic forms at least, no real sexual process occurs. 4. Studies on Polychæt Larvæ, by F. H. Gravely, M.Sc., junior demonstrator of zoology in the Victoria University of Manchester, with one plate and three text figures. 5. Some observations on Acinetaria, by C. H. Martin, demonstrator in zoology at Glasgow University, with one plate and six text figures.

Reports and Analytical Records FROM THE LANCET LABORATORY.

DRIED EGG AND MILK PRODUCTS.

(CASEIN, LIMITED, SHEEPCOTE-LANE, BATTERSEA, LONDON, S.W.)

WHEN food products are dried by such a process that on restoring water to them they appear again to be identical with the natural product they are obviously worthy of attention. A milk powder obtained by the ordinary method of evaporation by heat is no longer milk when water is added to it. The fat is separated amongst other things and the activity of the enzymes is destroyed in the process. The products of Casein, Limited, are, on the other hand, obtained by submitting a fine spray of the liquid to the action of a current of warm air. The result is that the liquid is instantly robbed of its water and a practically dry powder deposits. We found that the milk powder so obtained when treated with water yields practically natural milk again; there is no separation of constituents, the vital entities are not destroyed, and, moreover, the taste is indistinguishable from that of raw fresh milk. So with the egg powder which may be used for all practical purposes with the same success as the fresh egg. We have also examined a sweet whey powder and a powder consisting of the pure protein of milk. Lait-proto, as the powdered casein is called, gave the following results on analysis: moisture, 7·80 per cent.; protein, 84·70 per cent.; and mineral matter, 7·50 per cent. The dry substance contains therefore about 92 per cent. of pure milk protein. The milk powder gave the following results on analysis, from which it will be seen that the original milk was of excellent quality and contained a full share of fat: moisture, 1·60 per cent.; mineral matter, 5·50 per cent.; protein, 22·05 per cent.; fat, 34·00 per cent.; and sugar, 36·85 per cent. The egg powder gave the following results: moisture, 4·30 per cent.; mineral matter, 3·70 per cent.; protein, 54·00 per cent.; and fats, 38·00 per cent. We regard all these preparations with distinct favour; they are an obvious advance on food preparations dried by the agency of heat above coagulating point.

VIN DE VIE.

(SCHWEPPES, LIMITED, 64, HAMMERSMITH-ROAD, LONDON, W.)

The use of grape juice as a beverage diluted with plain aërated water appears to be growing in favour, and as there is no reason for believing that such a beverage is not entirely wholesome the practice may therefore be commended. Dilute grape juice certainly affords a refreshing and palatable drink, and it appears to have a cooling effect which some ascribe to its acid constituents. Vin de Vie we find has been sterilised by a satisfactory process; it showed no signs of fermentation and therefore of alcohol in appreciable quantity. Search for preservatives was made without success. Our analysis gave the following results: alcohol, a trace; extractives, 16·95 per cent.; tartaric acid, 0·92 per cent.; grape sugar, 15·15 per cent.; and mineral matter, 0·25 per cent. As is well known, grape sugar is the most digestible of sugars and, in fact, may be regarded as a predigested sugar which is fitted for direct absorption into the blood. Grape juice contains, however, other things besides sugar, amongst which are chiefly alkaline salts and a little protein. The juice is probably slightly laxative on this account, a property which has been remarked in the so-called "grape cure." A plentiful supply of grape juice has also been employed with favourable results in pulmonary as well as gastric and intestinal catarrh. It is also recorded that a regimen of grape juice reduces the albumin in albuminuria.

DRY YEAST TABLETS AND POWDER.

(MATTHAEI AND CO., 12 AND 13, CULLAM-STREET, LONDON, E.C.)

The use of yeast in therapeutics is well known, its effect probably depending upon its power to resolve complex bodies into simpler ones. Thus it has been used in cases where metabolism is obviously at fault, as in diabetes mellitus, some physicians assuming that it acts as though it possessed the ferment agents of the gastric and pancreatic juice. It has also been used in acne, eczema, and so forth. For these purposes it is desirable that the yeast should be clean and active, requirements to which we find these preparations comply. They are stated to be prepared from pure yeast by a special cold air process. However that may be, we found both the powder and tablets active in their attack on sugar. Under the microscope it was easy to recognise a pure species.

"DE RESZKE" CIGARETTES.

(J. MILLHOFF AND CO., 17, DOWN-STREET, PICCADILLY, LONDON, W.)

We are informed that these cigarettes have been prepared at the suggestion of the famous tenor whose name they bear. The result has been a blend of tobaccos which it is stated is free from irritating qualities even with delicate throats. According to our examination the tobacco in the one case appeared to be a carefully selected

Dubec and in the other Virginia. The smoke is agreeably fragrant and aromatic, and decidedly less irritating or acrid than that produced in common brands. No tobacco smoke can be absolutely unirritating, but in this case some attempt to reduce this quality appears to have met with success. It may be added that the paper is of very fine quality, and there is little doubt that in many cases the paper is one of the chief factors in irritation.

NORIDAL SUPPOSITORIES.

THE ANGLO-CONTINENTAL CHEMICAL WORKS, LIMITED, 63, CRUTCHED FRIARS, LONDON, E.C.)

The composition of these suppositories is mainly based on the hæmostatic action of the calcium salts and the extraordinarily powerful vaso-constricting effects of paranephrin, the active principle of the suprarenal gland. The formula of the noridal suppository is given as follows: calcium chlorate, 0·05 gramme; calcium iodate, 0·01 gramme; paranephrin, 0·0001 gramme; and balsam of Peru, 0·1 gramme. The healing and antiseptic action of the last constituent coupled with that of the hæmostatics no doubt accounts for the favourable clinical reports which were given when noridal suppositories were under trial.

SANTÉ COGNAC BRANDIES.

(AGENTS: R. FOORD AND CO., 93 AND 94, CHANCERY-LANE, LONDON, E.C., REPRESENTING G. MORICE NOULAUD AND CO., COGNAC.)

Accepting the results of analysis as a guide there would appear to be little doubt that these brandies are both pot-still products and the products of wine. We have examined four different specimens, two of which are described to be ten years old and the other two 20 years old. Amongst both specimens of these ages was one described as "brut." On analysis we found that the description "brut" meant that the extractives (practically consisting of sugar and resins) were comparatively small in amount. Thus, in the ten years old sample "brut" they amounted to 0·21 per cent., while in the ordinary ten years old sample they amounted to 0·57 per cent. Similarly in the 20 years old sample, "very choice brut," the extractives amounted to 0·20 per cent., while in the other sample of the same age they amounted to 0·59 per cent. The alcoholic strength of each sample was examined. It varied from 47·67 per cent. by volume to 50·31 per cent. As to secondary constituents, the aldehydes, furfural, ethers, and higher alcohols, they were generally present in considerably larger amounts than are found in the brandies of the Grande Champagne district. Ethers in particular varied from 135 parts per 100,000 of alcohol present to 172 parts. From these results we judge that the brandies have been distilled from full and vigorous wines, and hence they do not possess that delicacy of taste so characteristic of "fin champagne" which is distilled from light delicate wines. This view is borne out by the comparatively large separation of oils which occurred when the brandies were redistilled for the purpose of analysis in the laboratory. We have, however, no doubt that they are genuine Charente brandies and very suitable as stimulants for medical use.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on June 10th, Mr. HENRY MORRIS, the President, being in the chair.

Mr. C. A. BALLANCE, M.V.O., was introduced, and having made a declaration in the terms of the oath prescribed by the charter of 1800 was admitted a member of the Court of Examiners.

It was resolved to issue diplomas of Fellowship to 34 successful candidates; three other candidates were also successful but had not yet attained the legal age of 25 years; in all 73 candidates had presented themselves for examination.

The report of the Committee on Anæsthetics was received and adopted. It recommended that the following clause should be added to Section 1, Clause 6, of the regulations for the diploma in dental surgery:—

6. Of having attended at a recognised dental hospital and school a course of practical instruction in the administration of such anæsthetics as are in common use in dental surgery.

The following examiners were appointed:—Examiners in Elementary Biology: James P. Hill and Thomas W. Shore. Under the Examining Board in England: in Anatomy, W. H. Clayton Greene, Arthur Robinson, and William Wright; and in Physiology, Benjamin Moore and E. H. Starling. For the Fellowship: in Anatomy, C. H. Fagge, F. G. Parsons, James Sherren, and Arthur Thomson; and in Physiology, G. A. Buckmaster, E. W. Wace Carlier, C. F. Myers-Ward, and William H. Thompson. In Midwifery under the Examining Board in England:—Hugh J. M. Playfair, W. Rivers Pollock, J. H. Targett, and W. W. H. Tate. For the Diploma in Public Health: Part I., Harold R. D. Spitta; and Part II., Richard D. Sweeting. Mr. William F. Haslam was elected from the members of the Court of Examiners a member of the Board of Examiners in Dental Surgery.

A letter was read from the President reporting the proceedings of the General Medical Council at its late session; the letter was entered on the minutes and the best thanks of the College were given to him for his services as the representative of the College.

Mr. R. J. Godlee was appointed a member of the Court of the University of Bristol.

The PRESIDENT reported that as it was impossible for Dr. G. Elliot Smith to leave Egypt at present the Arris and Gale Lectures would be postponed to the winter.

The Council received from the Secretary of State for the Home Department a copy of a letter from the Society of Members (and already published [1]) requesting the observations of the Council upon it. The following reply was sent:—

The Council of the Royal College of Surgeons of England thank the Secretary of State for Home Affairs for affording them the opportunity of commenting upon the letter addressed to him by the honorary secretaries of the "Society of Members of the Royal College of Surgeons of England," and beg to submit the following observations in reference to the several paragraphs of the letter, viz.:—

1. It is not customary and it is unnecessary for the College to apply for a Charter to effect changes which it has power to effect by by-law. The power to admit women to examination for the diplomas of the College is given by the Medical Act, 1876, and the by-law has been made in accordance with the provisions of that Act.
2. The Medical Act of 1876 clearly contemplates a difference in the corporate standing of men and women admitted to medical qualifications, and the Royal College of Surgeons is entitled to give effect to this definite provision of the legislature.
   The property of the College is not vested in the existing Members, but in the body corporate. Members upon their admission pay a fee in return for which they receive a diploma entitling them, in association with the Licence of the Royal College of Physicians, to registration, and to other professional and collegiate privileges, but they pay no further fee or subscription.
   If, on petition being made at any future time by the College, the Crown should be advised to grant a Charter giving full corporate rights to women, the fact that the by-law now proposed existed would not place women in any worse position than that in which they are at present.
3. The Royal College of Surgeons is not comparable to a University with its numerous faculties, and there is no reason why it should follow the example of such bodies in framing its regulations. It may be pointed out that the course adopted by the Royal College of Surgeons is the same as that adopted by the Royal College of Physicians of London.
4. In the scheme for conjoint examinations by the Royal Colleges of Physicians and Surgeons and the University of London it is contemplated that three qualifications should be granted, each of which would be held subject to the laws and regulations in force at the particular institution from which it was derived.
   There is nothing anomalous or unprecedented in this arrangement, and indeed it is the position which actually prevails at the present time with regard to those who hold more than one degree or diploma.
5. The quotation in Paragraph 5 of the letter from the "Society of Members," with regard to Clause 1 of the proposed By-law XXVI., by omitting the important words "subject to the provisions therein and hereinafter contained," endeavours to show that the by-law is contradictory in its terms, but these words prevent this being the case.
6. The result of the poll taken by the Council shows that more than one-third of the Members to whom circulars were sent failed to express any opinion. As regards the supplementary poll mentioned, the Council have no information regarding the number and nature of the replies received, nor, so far as they are aware, have these particulars been published.

[1] THE LANCET, May 15th, 1909, p. 1406.

THE LANCET.

LONDON: SATURDAY, JUNE 19, 1909.

The Election to the Council of the Royal College of Surgeons of England.

THE Fellows of the Royal College of Surgeons of England will not have the easy task which was at first anticipated in deciding on the relative merits of the candidates for the three vacancies which now exist on the Council. As our readers probably all know, in each year three candidates retire in rotation, and as each candidate serves for eight years it follows that within the period of each eight years every seat on the Council, numbering 24, is vacated in turn. For the three seats now becoming vacant there are seven candidates, and the three members of the Council retiring by rotation are all offering themselves for re-election. This in itself is unusual, though the position has occurred, and we may mention that, so far as we are aware, on no occasion on which this has occurred have all the three retiring members been re-elected. If the impulse towards change is to play its usual part one old servant of the College at least will be left out at the present election, but will be able to quote regular precedent as a consolation.

The retiring members of the Council are Sir WILLIAM WATSON CHEYNE, Professor A. W. MAYO ROBSON, and Mr. CLEMENT LUCAS, and the four new candidates are, in order of seniority, Mr. W. HARRISON CRIPPS, Mr. C. A. BALLANCE, Mr. J. BLAND-SUTTON, and Mr. W. H. H. JESSOP. With regard to the question of re-election we have always felt that a member of the Council who has done good work is deserving of re-election at least for a second term, provided that his health will enable him to carry out the fairly arduous duties of the post. A great corporation should have a continuous policy, and this is best secured by making full use of experienced counsellors. We have also usually suggested that preference among candidates for office, whether for election or re-election, should be given to those who are still connected with a hospital and a medical school, so that as large a number as possible of the Council should be in close touch with educational matters. Whether it is ever desirable that a Fellow should hold office for a third period is a matter on which it is impossible to lay down any rule. The circumstances in which such an occurrence is desirable may be exceptional, but they can none the less exist. The general view, with which we ourselves are in substantial agreement, is that a Fellow who has been appointed for a full term of eight years and has then been re-appointed for a further term of eight years, so that he has served on the Council for 16 years, he has had his share in the government of the College, and may give place to a new man with the full knowledge that he has established a position among his professional brethren as a leader. Within many years the only instance we can call to mind of election for a third full term is that of Mr. BRYANT, who was elected to the Council in 1880, and sat therein until 1904, inclusive of a three years' presidency. Sir WILLIAM WATSON CHEYNE, senior surgeon to King's College Hospital and professor of clinical surgery at the College, became a Fellow in 1879, and was elected a member of the Council in 1897, but as he was then a substitute member he had to apply for re-election in 1901, when he was elected for the full term of eight years. Up to the present, therefore, he has served on the Council for 12 years, and we feel sure that his wish to continue in office will be endorsed by the electorate. Professor MAYO ROBSON also took his Fellowship in 1879, and is by four years Sir WATSON CHEYNE'S senior on the Council. Originally elected as a provincial representative, being on the acting staff of the Leeds General Infirmary and lecturer on practical surgery in the Leeds School of Medicine, he is now Emeritus Professor of Surgery in the University of Leeds, but must be regarded as a cosmopolitan representative of pure surgery who has been domiciled in London for many years. He is a distinguished operator, his lectures delivered to the College have been valuable contributions to science, and he has done much to advance our knowledge of operative procedure. These things may be borne in mind as counterbalancing the fact that Professor MAYO ROBSON has already served two full terms as a councillor. Mr. CLEMENT LUCAS took the Fellowship in 1871; he is consulting surgeon to Guy's Hospital, has served only one term of office, and is the only representative of Guy's Hospital seeking office at this election. Mr. HARRISON CRIPPS has already been a member of Council, obtaining a seat as a substitute member in 1905. Having applied for re-election last year without success he is now making a further application, and it is not unlikely that he may meet with his reward. He is the senior surgeon to St. Bartholomew's Hospital, his business ability was, we know, of much assistance to the Council during his short previous service of three years, and on general grounds his claim for an extension or renewal of confidence is strong. St. Bartholomew's Hospital, which Mr. CRIPPS represents, also provides another candidate in Mr. JESSOP, and this will probably lead to some splitting of the votes of the Fellows connected with that hospital, otherwise Mr. CRIPPS'S chances would be very good. Mr. BALLANCE'S Fellowship dates from 1882. He is surgeon to St. Thomas's Hospital, and has recently been appointed a member of the Court of Examiners. We have for a long time maintained that, though it is highly undesirable that all the examiners of the College should be members of the Council, as was almost the rule at one time, it is very useful that a certain proportion of the examiners should have seats on the Council. In this way the Court of Examiners is brought into touch with the Council, and the views of the examiners can be more fully represented to the governing body of the College than would be possible by means of reports. Mr. BALLANCE'S work on the surgery of the ear and of the brain is known, not only to the profession of this country, but to surgeons all over the world, and we consider that his presence on the Council would be a very distinct

gain to that body. Mr. BLAND-SUTTON took the diploma of Fellow in 1884. He is surgeon to, and lecturer on surgery at, the Middlesex Hospital. He is well known as a most able surgeon and skilful operator. His contributions to pathology and to gynæcological surgery have been numerous and we think that he, too, would be an acquisition to the Council. There are, however, but three vacancies, and it must not be forgotten that Middlesex Hospital sends already two very able members to the Council Board in the persons of the President, Mr. HENRY MORRIS, and one of the Vice-Presidents, Mr. PEARCE GOULD. This amount of representation is, we think, as much as is justified by the size of the medical school of Middlesex Hospital. We do not doubt that Mr. BLAND-SUTTON will one day be a member of the Council of the College if he is not a successful candidate on this occasion.

Mr. W. H. H. JESSOP, like Mr. BLAND-SUTTON, became a Fellow of the College in 1884. He is senior ophthalmic surgeon to St. Bartholomew's Hospital, and we believe that he comes to the poll rather as an ophthalmic surgeon than as a hospital representative. There are considerable reasons why there should be an ophthalmic surgeon on the Council, and, in fact, for the past 30 years there has always been at least one seat occupied by a surgeon well acquainted with the surgery of the eye. At the present time Mr. RICHARDSON CROSS ably represents this branch of surgery, and although the vote of St. Bartholomew's Hospital can generally carry a candidate we are inclined to think that Mr. JESSOP'S candidature on this occasion will not be successful, Mr. CRIPPS being also a candidate. But all the candidates are justified by their professional positions in expecting the support at the poll of the Fellows coming from their own schools, while some of them can rest their claims in a very distinct and notable manner upon a wider basis, so that the electors have a difficult task before them. Of the candidates seeking re-election Sir WATSON CHEYNE should be absolutely secure of success. Of the men who are coming forward for the first time Mr. BALLANCE'S candidature appears to us to be the strongest. In the event of Mr. BALLANCE being elected to serve on the Council at the first time of asking, and looking upon Sir WATSON CHEYNE'S seat as secure, there would only remain one seat to be allotted among three past councillors, Professor MAYO ROBSON, Mr. CLEMENT LUCAS, and Mr. HARRISON CRIPPS. The vote of St. Bartholomew's men will, then, probably serve to turn the scale between the three, but any one of them may be found above Mr. BALLANCE at the poll, past services rightly reckoning with the electorate.

Non-Alcoholic Galenicals.

AS we pointed out in THE LANCET of May 29th, p. 1540, the new taxes which will be imposed on rectified spirit if Mr. LLOYD GEORGE'S Finance Bill be passed without amendment in this respect, will throw a grievous burden alike on hospitals and on those medical practitioners who supply medicines to their patients, or who have club practices. The present time may therefore be considered opportune for emphasising the possibility of reducing to a minimum the use of alcoholic preparations of drugs without loss of therapeutic efficiency or of what is known as pharmaceutical elegance. There is no room for doubt that many of the tinctures and other spirituous preparations of the British Pharmacopœia contain substantially more alcohol than is for any purpose necessary, and in nearly all cases the cost of a tincture depends far more on the solvent or menstruum than on the drug employed. Some tinctures are nothing but alcoholic solutions of definite substances—e.g., tincture of iodine, tincture of iron perchloride, and ammoniated tincture of quinine. The spirit in these three preparations can readily be dispensed with. Iodine is freely soluble in an aqueous, as well as in a spirituous, solution of potassium iodide; liquor ferri perchloridi of suitably modified strength may well replace its alcoholic equivalent; and even in ammoniated tincture of quinine the proportion of alcohol can be considerably reduced on the lines of the more agreeably flavoured ammoniated elixir of quinine of the British Pharmaceutical Codex. The majority of the Pharmacopœial tinctures are not, however, solutions of definite substances, but are dilute alcoholic extracts of various crude drugs. In many instances they contain much more alcohol than is necessary for the thorough extraction of the amount of drug which is ordered, and with respect to such no practical pharmacist would experience difficulty in preparing them in concentrated form for subsequent dilution with water. Examples of preparations of this type are the compound tinctures of camphor, cardamoms, gentian, and lavender. The use of the aqueous liquid extract of opium in place of laudanum has for many years been quite common. Tincture of cinchona, as is well known, precipitates on the addition of water, yet even in the case of this drug a glycerine preparation of equivalent alkaloidal strength is readily obtainable. The formula for this galenical is given by the British Pharmaceutical Codex as follows:—

Glycerinum Cinchonæ, B.P.C.

Liquid extract of cinchona	20·00
Tragacanth in powder	0·75
Alcohol	2·50
Distilled water	20·00
Glycerine sufficient to produce	100·00

This is a palatable preparation, much cheaper to produce than the tincture, and eminently suitable for use in a concentrated form. The group of preparations which includes spirit of chloroform and aromatic spirit of ammonia offers in some cases similar opportunities for economy. In St. Thomas's Hospital much money has been saved by the adoption of an aqueous emulsion of chloroform—made with the aid of a small quantity of tincture of senega or tincture of quillaia—in place of spiritus chloroformi, B.P. So, again, by the use of oils which are free from terpenes a satisfactory "sal volatile" may be made with an extremely small proportion of alcohol. For many years some well-known manufacturing druggists have used glycerine as a preservative for liquid extract of cascara sagrada in place of the alcohol which the British Pharmacopœia prescribes for the purpose. The glycerine extract is more miscible, less nauseous, and in other respects wholly satisfactory. The list might be considerably extended, but enough has been stated to prove that so far as hospitals and private practitioners are concerned it is a simple matter to escape from at least some

of the expense entailed by the increased taxes on spirits. Druggists who live in fear of the inspectors administering the Sale of Food and Drugs Acts are in less fortunate case. With respect to the galenicals which have been mentioned, it may be definitely stated that, given careful preparation, no difficulty need be anticipated as regards their keeping properties or their compatibility with other liquids. A tincture made with glycerine and water has, no doubt, a taste which to many is less attractive than its alcoholic equivalent. But this consideration is quite insignificant when it is remembered that equal therapeutic activity and equal convenience in handling may be secured at a great saving of expense by the avoidance of unnecessary alcohol in liquid preparations of drugs.

Social Betterment in America.

AMONG the many services rendered by ex-President ROOSEVELT to his country, few are likely to have a more abiding influence upon its welfare than the impetus which he has given to the cause of sanitary and social reform; a cause only second in its importance to the moral cleansing which he at least began to introduce into the conduct of mercantile and of municipal affairs. The District of Columbia, in which the city of Washington and the Presidential residence and offices are situate, is entirely independent of State legislation; and the city has been suffered to grow to its present magnitude in a somewhat haphazard manner, the effects of which were greatly aggravated after the civil war by the number of emancipated coloured people who sought refuge and a maintenance within its boundaries, and who were quite willing to disregard many of the ordinary requirements of decent and civilised life. In order to meet the wants of this class a number of flimsy tenements seem to have been erected upon ground originally intended to be reserved as the curtilages or gardens of better houses, and blind alleys of the same description were built up in the central spaces of what once were squares, with the general effect of crowding the city, even in the immediate neighbourhood of the best class of its habitations, with a series of slums and an aggregation of slum dwellers to which it would not be easy to find a parallel elsewhere. When Mr. ROOSEVELT became an official resident in Washington his attention was called to the various evils which had been suffered to come into existence there, and he appointed a Commission charged to inquire into the facts, and to recommend or apply such remedies as circumstances might permit. This Commission consists of 15 members, among whom there is a large medical element, and it resolved itself into special committees for the better conduct of the work entrusted to it. The reports of the Committee on Housing, of the Committee on the Building of Model Houses, of the Committee on Industrial and Personal Hygiene, and of the Committee on Social Betterment have just reached us, and we have only admiration for the spirit in which the various evils which these committees were appointed to encounter have been attacked, and for the good sense by which their acts and recommendations are characterised. The first three reports deal chiefly with matters which are occupying more or less the attention of all civilised communities, and to which, therefore, many parallels may be found elsewhere; but the report of the Committee on Social Betterment strikes us as being rather distinctively American in its character, and as dealing with subjects which elsewhere there has been too much tendency to ignore, or at least to regard as lying somewhat beyond the scope of public or official intervention. We would invite attention to some of its more distinctive features.

Perhaps one of the most characteristic of these is an elaborate inquiry into the amount of injury which is inflicted upon the community by the prevalence of the "drug habit," and, indirectly, by the activity of the makers and advertisers of the quack medicines by which this habit is largely created and fostered. It is said that during the last nine years 256 patients have been treated in the Columbia hospitals for the opium habit and 62 for the cocaine habit; while a large number of pharmacists report extensive sales of the alcoholic preparations of opium, such as McMunn's elixir, Squibb's mixture, and other proprietary or secret medicines containing opium. A list of no less than 38 largely advertised preparations, depending for their activity upon morphia, cocaine, or chloral, is furnished; and one at least of these, Mrs. Winslow's Soothing Syrup, which is said to owe its activity to morphia, is freely advertised in this country. We read also of extensively advertised "soft drinks" containing caffeine, extract of kola nut, and extract of coca leaf, "many of them sold at nearly every soda-water fountain or as carbonated goods without any warning to the public of the harmfulness of the ingredients which they contain." Another form of the same evil is the fact that a large number of "cures" for the drink habit or the opium habit are advertised by various charlatans, and that nearly all of them contain large quantities of morphia. Mr. SAMUEL ADAMS is quoted as having published a list of 16 advertised cures for the opium habit, all which contain morphia, and which have no other object than to substitute, for slavery to the drug obtained from the pharmacist, slavery to the same drug disguised, and purchased at a larger price from the "doctor," or "institute," or "society." "The Sunday newspapers and small weeklies teem with advertisements of drink cures, all of which are swindles." The report passes on to consider the effects of antipyrin and its analogues as advertised cures for headache, and of thyroid extract as a cure for obesity, saying, among other things, that 1665 cases of more or less serious poisoning, 54 of death, and 169 of "habitual use" were traced to the advertised headache remedies by a very moderate amount of inquiry. One of these "remedies," containing acetanilid and antipyrin, is advertised as Harper's "Curforheadake Brane Fude," an ingenious perversion of spelling which was declared by an American judge to be "misleading and therefore a violation of the law." Another important section of the report deals with the numerous proprietary medicines which are advertised in such terms as to suggest that they will produce abortion, another with the infanticide resulting from the systematic drugging of children, and others with "cures" for diphtheria, consumption, catarrh, cancer, rheumatism, epilepsy, and other forms of prevalent disease. Altogether, we learn that there were existing in the United States in 1900, 1680 "patents"

for various medicines, that 460 more were granted by the end of October, 1908, and that there are valid "trade marks" covering 319 different "drugs and chemicals," and 5974 covering various "medicinal compounds." It seems that the composition of a "patent" medicine must be declared at the patent office, but that of a "proprietary" medicine, protected only by a trade mark, was allowed to remain secret until the enactment of the Pure Food and Drugs Law of 1906, which requires the presence and amount of alcohol, morphia, opium, cocaine, heroin, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate, acetanilid, or any derivative or preparation of such substances, to be disclosed on the label. If this enactment be enforced it will at least deprive the users of quack medicine of the excuse of ignorance.

A general survey of the social condition and circumstances of the poorer population of the District is based upon a careful investigation of the circumstances of 1251 families, occupying 1054 houses, comprising 5157 persons, and, in the great majority of cases, having a family income below $1000 per annum. The investigation concerned both white and coloured people, and embraced an exhaustive survey of the general conditions of living, of income and expenditure, of occupations, of hours of labour, of unemployment, of sickness, and generally of all the circumstances favourable or adverse to the people who were interviewed. Perhaps the most remarkable result is the disclosure of the extent to which the classes concerned, including among them a large number of clerks and other subordinate Government officials, are fleeced by money-lenders; and a very important recommendation of the report is that this form of business should be controlled by enactment, and placed under such regulations as to terminate the crying abuses which now prevail. It seems to be recognised that loans to people situated as described are a necessity, and that the only way to get rid of the shark is to meet him on his own ground. Various attempts to do this have been made in different States and are described in the report; and a Bill for the same purpose has been drafted by the Commissioners for the District of Columbia, and, if enacted, will legalise the business, will lay down rules subject to which it must be conducted, and will thus, it is hoped, induce respectable people to supply the necessary capital. But the main or key note of the report is in the conviction which it expresses that the first duty of the State is to strive for the elevation of the slum-dwellers. To this end it is recommended that all unsightly and insanitary property should be condemned and purchased by the Government, and that inexpensive and healthful habitations should be erected for the poor, who should be assisted to rent such homes or to purchase them by instalments bearing low interest. Many families now pay for "shacks" at a rate which returns to the owners anything between 9 and 35 per cent., and the inhabitants of such places have no possibility of raising themselves in the scale of humanity. The report contends that if the Government can build prisons for criminals, almshouses for the poor, asylums for the afflicted, and analogous institutions on which millions have been spent, there can be no condemnation for an application of the same solicitude to those who are reduced to a condition of semi-paralysis by adverse economic conditions, and who have no power to take the first step towards elevating themselves. We think that all who know the poor, and especially the members of our own profession, who know them well, will agree that the recommendations of the Washington Committee are characterised at once by wisdom and by philanthropy.

Annotations.

"Ne quid nimis."

A WORD ON CATALEPSY.

FROM time immemorial the "living statue" has been regarded with superstitious awe and wonder, and in other days and lands he has been hailed as specially favoured, and made the object of reverence and even of worship. If we of the twentieth century are less inclined to wonder, the word "trance" still conjures up to the lay mind something of the romantic and the mysterious: it forms a prominent feature of many fairy tales familiar to our childhood. While the inevitable result of increase in the sum of human knowledge is a tendency to scepticism where old tales are concerned, our scientific wonder is none the less excited by authenticated instances of the phenomena of catalepsy. With an involuntary immobility that far surpasses the range of voluntary immobility, the cataleptic or catatoniac will remain for hours or days in the same position, indifferent to his surroundings and oblivious of the passing of time. We publish this week the interesting narrative of a case of catalepsy occurring in a boy of 15 years, under the observation of Dr. Donald E. Core. For a period of over 16 weeks the patient did not make a single voluntary movement, apart from electrical stimulation, but lay on his back staring at the ceiling. His condition was one of passive negativism; active negativism is a state in which any suggestion immediately arouses the corresponding opposite suggestion. The view that many of the wondrous stories of the Middle Ages are to be explained as manifestations of epidemic hysteria is one which is steadily gaining ground. Readers of Dr. Paul Richer's treatise on hystero-epilepsy will find ample evidence there to support this hypothesis. Among these manifestations catalepsy occupies a foremost place, and many writers regard it as essentially and peculiarly hysterical. In the light of recent advances in our knowledge of the functions of the cerebrum, however, this contention is inadequate. Catalepsy may be, and often is, indicative of grave organic disease. A distinction is drawn by some between catalepsy and catatonia, the former being a state in which there is blind unconditioned obedience to suggestion from without, the latter to abnormal stimuli from within. Dr. Core's patient exemplified both of these. In response to stimuli of extraneous origin his limbs could be moulded into any unusual position and kept there—the condition known as flexibilitas cerea; while he lay immobile for weeks at the bidding of stimuli of intrinsic origin (or perhaps in the entire absence of such stimuli), a condition of typical catatonia. Any one who has been forced to maintain the same position for any length of time knows how difficult and fatiguing active inhibition is; passive inhibition must be a phenomenon of quite a different nature. In general paralysis of the insane, cerebral arterio-sclerosis, post-epileptic confusional states, above all in dementia præcox, catatonic phenomena are to be encountered. They may occur in varying degrees of intensity and duration. As a result of the persistence of the idea of a movement, whatever be the source of this idea, the innervation of the

corresponding muscles is continued until fatigue renders the maintenance of the position impossible. In Pick's "Studies in Motor Apraxia" will be found a photograph of a patient with his face in a jug of milk, a position which he preserved for some time consequent on his entire inability to inhibit a persistent innervation. In the severe catatonia of dementia præcox there would appear to be a dissociation between the afferent and efferent aspects of cerebral function. Ideas of afferent or central derivation, which normally awaken innervation and so movement, are wanting, or at least fail to produce any effect. Whether catatonia in its varying forms will prove a symptom of localising value remains to be seen.

THE HAMPSTEAD GENERAL HOSPITAL.

IN an annotation last week we expressed our belief that the troubles in connexion with this hospital were at an end, though we did not go so far as to say, as certain of our correspondents seem to have believed, that the resulting situation was quite satisfactory to everybody. We were perhaps a little previous in the definite statement that all controversy is a thing of the past, but we had good reason for considering that such was the case, or will be in a very short time. Our statement has slightly anticipated events, but we hear that three good friends of the Hampstead General Hospital have been chosen as a small embassy to meet the British Medical Association, which Association has delegated three important members of its body to meet them and finally suggest a position which shall leave no grounds for further recrimination. Six experienced, level-headed men, familiar from beginning to end with all the details of a most difficult and unfortunate contention, having absolutely nothing personally to gain in the matter, but being anxious only for the interests of the institution and the honour of the medical profession, should certainly be able to bury the quarrel, even though it may be impossible to please everybody. They have to deal, it must be remembered, with accomplished facts and the results of those facts, not with the situation as it originally arose; it is out of their power—out of anyone's power—to obliterate the past. A vigorous communication has reached us this week wherein some pointed remarks are made upon the financial position of the hospital, but our correspondent speaks of the "lingering hope that some *modus vivendi* may be arrived at whereby the general practitioners of Hampstead may be readmitted to the free wards of an institution founded and developed by them." In echoing that hope we are glad to think that it has much more justification probably than the words suggest. We think it quite probable that beds will be set apart in the Hampstead General Hospital for the use of the Hampstead general practitioners. Of course, in such an arrangement all the practitioners of the neighbourhood would have equal facilities extended to them, and, if only for reasons of administration, the wards would be separate from those occupied by the beds of the consultant staff. We sincerely trust that in this way the hospital will enter upon a peaceful and prosperous career. The quarrel has been a strenuous one, and on both sides the arguments employed have been open to legitimate criticism, for there was no obvious right and wrong in the several difficult situations which presented themselves. All that those involved could do was to act upon their convictions and in accordance with what they believed to be the best thing for the medical profession and the best thing for the public. When the episode is finally closed we suggest that a full and clear statement should be made of all the circumstances, and we are glad to believe that in spite of a good deal of hard language it will be then found that nothing has occurred derogatory to the honour of the medical profession or of those involved in the contention. The Report for the year 1908, which has just reached us, publishes the names of the reconstituted staff, which are as follows:—Consulting Physician—Sir Samuel Wilks. Consulting Surgeon—Mr. Edmund Owen. Acting Staff—Physicians to In-patients: Dr. G. A. Sutherland and Sir John F. H. Broadbent. Physicians to Out-patients: Dr. C. O. Hawthorne, Dr. Frederick W. Price, and Dr. A. Manuel. Gynæcologist: Mr. Frank T. Taylor. Physician for Diseases of the Skin: Dr. S. Ernest Dore. Surgeons to In-patients: Mr. J. Jackson Clarke and Mr. W. H. Clayton-Greene. Surgeons to Out-patients: Mr. J. W. Thomson Walker, Mr. W. Fedde Fedden, and Mr. George E. Waugh. Ophthalmic Surgeon to In-patients: Sir William J. Collins. Ophthalmic Surgeon to Out-patients: Mr. Malcolm L. Hepburn. Surgeon for Diseases of the Throat, Nose, and Ear: Mr. Harold Barwell. Dental Surgeon: Mr. Charles H. J. Acret. Anæsthetists: Dr. G. A. H. Barton and Mr. Hedley C. Visick. Pathologist: Dr. J. A. Torrens. Medical Officer in Charge of Roentgen Ray and Electrical Department: Mr. S. Gilbert Scott.

DIVULSION OF THE PUBIC SYMPHYSIS WITH RUPTURE OF THE BLADDER.

IN the *Intercolonial Medical Journal of Australasia* Mr. A. F. Maclure has reported the following remarkable case of injury of the bladder under the care of Mr. R. Hamilton Russell at the Alfred Hospital, Melbourne. A man, aged 50 years, was taken to the hospital in an ambulance. While riding a bucking horse he was thrown several times upwards, coming down on the pommel of the saddle, which struck him in the pubic arch. At the second impact he said that "he felt the bones give way," causing intense pain, which was aggravated by each succeeding blow. The agony was great, and when at length the horse was controlled and he was lifted off he was unable to stand. He was carried home, where a practitioner who saw him soon after the accident passed a catheter. Only a little bloody fluid came away. On admission eight hours after the accident he complained of severe pain in the pubic and right iliac regions, which came on in spasms. Examination showed marked fulness and rigidity of the whole lower abdomen, which was dull on percussion. Over this region there was general ecchymosis. The scrotum was distended and dark purple. The discolouration extended as far back as Colles's fascia. The penis was swollen and discoloured. Pressing the pubic bones together did not cause pain or crepitus, but on palpation these bones were felt to be separated by a considerable interval. A rubber catheter was passed, but only a little bloody fluid was obtained. There were no bleeding from the urethra and no desire to micturate. There seemed no doubt that the impact of the pommel of the saddle had torn the pubic bones asunder and involved the bladder and perhaps the urethra. An operation was performed nine hours after the injury. A median incision four inches long in the hypogastric region showed the following conditions. The pre-vesical space was distended with bloody fluid (blood and urine) which had stripped up the peritoneum, which was untorn, from the pelvis and iliac fossa for some distance. The pubic bones were separated for a distance of nearly an inch, and on being pressed together sprang apart again when the pressure was removed. A large piece of the right rectus muscle was torn from its insertion into the os pubis. The bladder and surrounding structures were separated from the bones and the tissues generally were much infiltrated. A large tear was found in the front of the bladder on the left side near the neck. It would not have been possible to suture the bladder, nor was this considered desirable. A

dependent opening was made in the perineum for drainage. The patient was placed in the lithotomy position and a full-sized median grooved staff was passed. On incising the perineum the finger entered a considerable cavity below the pubic arch to the right of the urethra, which was intact. A second tear in the bladder was then found, a large rent below and to the right of the neck. By inserting a large drainage-tube into this opening it was found possible to drain the bladder without interfering with the urethra. This was accordingly done and the operation was completed by passing a drainage-tube through the hypogastric incision into the upper tear and closing the remainder of the wound. The bones were approximated by pressure on the hips, the pelvis was strapped with a strip of plaster, and the knees were tightly tied together. No constitutional disturbance followed. The suprapubic tube was removed on the tenth day and the track slowly closed with a little suppuration. The perineal tube was left in for three weeks. A week after its withdrawal the patient micturated normally. A small urinary fistula persisted in the perineum for a few weeks, and healed completely in about three months. The patient made a complete recovery. Mr. Russell has not been able to discover any record of a similar accident, nor of any double rupture of the bladder, however produced. The escape of the urethra from injury was astonishing. A striking reflection is that the recovery from this severe injury was more complete and the ultimate loss sustained by the patient was much less than would have resulted from a relatively trifling blow on the perineum sufficient to damage the urethra.

GRINDERS' PNEUMOCONIOSIS IN SHEFFIELD.

THE dangers that result from dusty occupations have been long recognised, and among these the work of grinding edged tools holds an unenviable pre-eminence, probably owing to the irritating qualities of the particles of stone and steel which are here inhaled. We therefore welcome the inquiry which has recently been held by a Commissioner representing the Home Secretary into the question of the feasibility of laying down a scheme of regulations for the control of works in which the operation of grinding is carried on. The inquiry was held at Sheffield, the chief seat of the cutlery trade, and some striking evidence was given by Dr. Harold Scurfield, the energetic medical officer of health of the city, who has done much to call attention to the magnitude of the evil. He showed that the death-rate from phthisis is 15 per 1000 among grinders, whereas it is only 2·6 among males over 20 throughout the rest of the population; while the death-rate from other diseases of the respiratory organs is 5·6 per 1000 among these workers as compared with 2·1 among the general population. Among cutlers, whose work s less dangerous, the death-rate from phthisis is still 6 per 1000, and that from other respiratory diseases 7 per 1000. Two out of every three grinders die from consumption or other respiratory disease. Dr. Scurfield stated that he had paid a visit to Solingen in Germany, where similar work is done, and found that a great improvement in the health of the workers had resulted since a system of exhaust ventilation had been adopted, whereby the dust was removed as it was formed; and it is legitimate to hope that the same system may be inaugurated in this country. It is satisfactory to note that the employers through their representative at the inquiry evinced their willingness to coöperate heartily in any measures that might be found advisable. A curious point was brought out in the evidence given by Dr. E. L. Collis—namely, that the percentage of ill-health among the wet-grinders is slightly greater than that among the dry-grinders, although it might have been supposed that the laying of the dust by water would have prevented the occurrence of respiratory disease. It was suggested that here the evil resulted from the habit of tuberculous workmen of spitting into the trough in which the grindstone worked, and the consequent dissemination of the bacilli in the spray produced. This point appears to need further investigation. Throughout the inquiry it was impossible not to be struck by the difficulties introduced into the investigation by the application of the word "phthisis" to both tuberculous and simple fibroid disease of the lungs. It is most desirable that some word should be introduced to represent the latter condition, and as "pneumoconiosis" is too cumbrous for general use it might be suggested that "coniosis" or "coniasis" might be adopted, since it is on the lungs alone that the danger of dusty work falls and the prefix "pneumo" is not needed to distinguish this from other conioses.

MEDIÆVAL HOUSES AND PHTHISIS.

PULMONARY tuberculosis has been suggested by Mr. John Burns to be the result of social inequality, and this is true in the sense that those on the lower rungs of the social ladder, in addition to being badly fed and housed, inherit habits which make for the propagation of disease. The habit, almost universal amongst the poor in the remote Highlands of Scotland as well as in London slums, of keeping shut all windows and apertures through which the cold outer air may penetrate into their dwellings, is probably a relic of the time when the drenched serf or hunter crept back to his hut from the damps and fogs without, and, like an Eskimo, tried to forget the cold of the outer world in the lulling stuffiness—which was not necessarily warmth—of his domestic interior. The hut of primitive man was at first round, and as it passed through various stages of development to the square or oblong shape now universal, it never ceased to abound in dark nooks and sunless angles where disease germs, especially those of phthisis, might be harboured or bred. Before the days of glass, windows were at best small apertures. In his interesting "History of the House: the Struggle for Fresh Air and Light," Dr. Gould of Philadelphia expresses the opinion that "the habit of bad houses and of house diseases," following on a faulty method of building, "is the oldest of human habits." And in a series of admirable illustrations of primitive dwellings, from the round stone huts of the monks of Skillig and the oratory of St. Gallerus near Dingle, to "Teapot Hall" at Scrivelsby in Lincolnshire, he shows how unhygienically the early Celts and Saxons were housed. "Teapot Hall," which still stands, is probably a good specimen of an early mediæval dwelling. It is simply a slanting roof standing on the ground, and, as such, resembles the stone oratory of St. Gallerus. Old English serfs in the Middle Ages were perpetually drifting into towns, where they obtained freedom, but they doubtless brought their love of mere stuffiness with them, and as the early mediæval town was mainly built of wooden shanties it must have been designed much on the lines of "Teapot Hall." The roof-shaped cottage, as Dr. Gould shows, only gradually enlarged its proportions, and this it did by throwing out pent-houses, annexes, or oven-shaped constructions, which in their turn were quite elaborately roofed by a new system of rafters springing from the central roof-tree. A barn at Bolsterstone is shown in cross-section, most ingeniously, and at the same time inconveniently, enlarged by the addition of a kind of aisle. Air and light were the last things the old builders sought after. Indeed, they seemed, in countries north of the Alps, to aim at excluding both, even in buildings such as monasteries, colleges, or country-houses where some dignity was sought after. It is easy to conceive what an impetus such a bad theory and such

bad buildings must in the Middle Ages have given to every form of dirt disease, but especially to pulmonary tuberculosis.

THE FESTIVAL DINNER OF THE HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

THE dinner in aid of the jubilee fund of the Hospital for the Paralysed and Epileptic was held on June 10th, by permission of the Lord Mayor of London, in the Mansion House. The Lord Mayor presided, and was supported by H.S.H. Prince Alexander of Teck, chairman of the board of stewards. Among those present were Lord Justice Kennedy, Sir William Gowers, Mr. Sheriff Baddeley, the Dean of Canterbury, Sir Felix Semon, Mr. Carl Meyer, and many members of the medical staff of the hospital. The chairman, in proposing the loyal toasts, mentioned that His Majesty the King had consented to visit the hospital on Nov. 4th to open the new buildings, and that the Princess of Wales had consented to visit the hospital in October to receive purses. The Lord Mayor then proposed "Success to the Jubilee Fund." In all some £50,000 were required for new buildings, especially for a new nurses' home. He laid stress upon the excellent work which the hospital was doing and pointed out that medical men came from all over the world to attend the practice of the hospital. Mr. Frederick Macmillan, the treasurer, responded. Then came the toast of "The Medical Staff," proposed in an admirable speech by Mr. Comyns Carr, who reproached his hosts for putting him down to speak after dinner instead of before. Had the latter been the case he could have said to them what they had so often said to him, namely, "Avoid rich food, be sparing with your alcohol," but now what was the use of saying anything? Sir William Gowers responded. During the course of the evening subscriptions to the amount of £2719 were announced. The final toast was that of "The Chairman," proposed in a graceful little speech by Prince Alexander of Teck.

A FATAL CASE OF POISONING BY ATOXYL.

THE occurrence of toxic symptoms after the use of atoxyl has been observed and recorded in a considerable number of cases, the most serious being those affecting the eyes, such as retinal hæmorrhage, amaurosis, and optic atrophy. Koch observed 22 cases of blindness after its use in the treatment of 1633 cases of sleeping sickness. In addition to these ocular effects various symptoms have been frequently observed, including malaise, attacks of vertigo, insomnia, dryness and irritation in the throat, pains in the limbs, and various paræsthesiæ. In some cases slowness of the pulse and even anginal attacks have occurred, while anorexia, vomiting, diarrhœa, and jaundice indicate its effects on the digestive system. Albuminuria, nephritis, and painful micturition have also been described, as well as various cutaneous lesions. These toxic effects are analysed in a paper (published in the Münchener Medizinische Wochenschrift of May 11th) by Dr. Heinrich Schlecht, of Professor Strümpell's clinic at Breslau, and details are given of a case in which the administration of atoxyl was followed by death. The patient was a butcher, 28 years of age, who developed a chancre in November, 1907. Apart from an attack of enteric fever ten years before, he had always had good health. There was no history of epilepsy or of alcoholism. Ten weeks after the development of his chancre a maculo-papular rash appeared with condylomata at the anus. He was then treated by mercurial inunction for three weeks. A little later he was given five grammes of potassium iodide daily by the mouth and received four injections of 0·1 gramme of salicylate of mercury subcutaneously. After a further interval of six days, during which the patient felt well, atoxyl was given in four separate doses of 0·6 gramme spread over a period of eight days, the total quantity given being therefore 2·4 grammes. The day after the last injection the patient became seriously ill with malaise, anorexia, vomiting, and sudden rise of temperature. Within a few hours epileptiform attacks supervened, with tonic and clonic spasms and complete loss of consciousness. The pupils were sometimes contracted, sometimes dilated, and insensitive to light. The tendon reflexes, which were at first abolished, later became exaggerated, and a Babinski reflex was obtained on both sides. A high degree of cyanosis supervened, respiration was sometimes deep, at others rapid and superficial, while during the fits breathing would cease for considerable periods, to be followed by markedly dyspnœic respiratory movements. The heart's action became very weak, the pulse rapid and small. The urine contained albumin and casts. Examination of the blood showed a marked leucocytosis and some polycythæmia. Death occurred in one of the epileptiform attacks. At the necropsy the heart muscle showed degenerative changes, and there was marked œdema of the lungs. The liver showed fatty and necrotic areas, and there were signs of marked destruction of red blood corpuscles both in the liver and spleen. The kidneys were large, soft, flabby, and congested. In the central nervous system the only changes observed were local proliferations of the neuroglia in the cortex and recent degenerative changes in the vessels. Dr. Schlecht inveighs strongly against the use of atoxyl for syphilis, blood diseases, and skin lesions for which ordinary methods of treatment are available. He suggests that there may be in some persons an idiosyncrasy to atoxyl, since toxic symptoms are on record after comparatively small doses, and he recommends the utmost care in its use. He gives no details of the source of the atoxyl used in the case he records. From the literature it would appear that some samples of atoxyl more often give rise to toxic symptoms than others, and it is possible that some impurity may be the cause of some of the serious effects observed. It is obviously of the utmost importance that the substance should be free from arsenates, and that it should contain its arsenic in the form of arsonate. Dr. Schlecht's case is a further indication that atoxyl is a drug which must be used with great discrimination, and that its effects must be very carefully watched.

A SERIOUS CASE OF MILK ADULTERATION.

THE North-Eastern Dairy Company, Limited, of Durham-road, Holloway, was recently fined £100, with £21 costs, at the North London Police-court for selling milk which contained 6 per cent. above the normal proportion of water. The conviction took place after the summons had been adjourned for further evidence, and on the second day a witness very damaging to the defendants was produced. He was a man who had been in their employment and in that of their predecessors, a company entitled the Callow Park Dairy Company, for 25 years, and he deposed that on the day named in the summons he received and obeyed written instructions from the branch manager to put from four to six quarts of "separated milk" into churns containing pure milk. The circumstances which caused Mr. D'Eyncourt to impose the heavy fine mentioned were stated by him as follows: "At the first hearing the company had pleaded warranty of the milk to them by the farmer, and had put their servants into the witness-box to swear that it had not been tampered with by them. Consequently, if the man mentioned had not come forward and confessed, the case would probably have been dismissed, and the blame for the condition of the milk would have been cast upon the farmer who supplied it." In this connexion the learned magistrate

observed pointedly that it was open to the Islington borough council to take further proceedings with regard to the witnesses whose evidence had been discredited. It may be added that four previous convictions for similar offences were proved and that the company was stated to have been fined on one occasion no less than £50 at the Thames police-court. In THE LANCET of June 12th will be found the text of the principal provisions of Mr. John Burns's Milk Bill directed against tuberculosis, from which it will be seen that the President of the Local Government Board proposes that all dairies (including dairy farms) shall be registered, and that Subsection 3 of Section 1 is as follows: "On the second or subsequent conviction of a dairyman of an offence against this Act or the orders made thereunder the court by which he is convicted may ..... order that the name of the offender be removed from the register of dairymen either absolutely or for such period as may be specified in the order." This subsection does not apply, and might usefully be made to do so, in cases outside the general scope of the Bill, which is directed against the sale of milk likely to be infected with disease. It is suggested, however, by the case of the North-Eastern Dairy Company, Limited, that unless care is exercised the limited company may lend itself to covering infringements of the new law relating to the sale of milk, so far as the penalty which consists in the removal of an offending dairyman's name from the register is concerned. Presumably, in the case of a company he will be a manager or servant for whom another can easily be substituted, and it may be suggested that the absence from the Bill of any direct recognition of the milk trade as conducted by companies may tend to weaken its practical application in the future.

TYPHOID CARRIERS.

THE important part played in the dissemination of enteric fever by persons who act as "carriers" of infection while themselves no longer suffering from the disease is now well established, as the Secretary of State for War recently explained in the House of Commons. A difficult problem is presented in the question as to how the danger thus arising is to be met. Any attempts made in this direction must be watched with the greatest interest. We have recently received a copy of a notice issued by Dr. D. S. Davies, medical officer of health of Bristol, which is aimed at this mark. It consists of two parts—one addressed to hospital physicians and others who have cases of enteric fever under their care, and the other to the convalescents themselves. Physicians are urged to keep a register of their patients and to endeavour to secure their periodical attendance for examination after they have been discharged from hospital. Patients who have suffered from the disease are warned of the danger which may still exist of disseminating infection and instructed to use special care and cleanliness in preparing food for others. The idea in both cases is excellent, but we cannot help fearing that difficulties will arise in carrying it out. In the first place, many patients will not wish for the trouble of reporting themselves at intervals, even during a period of six months as here recommended. Still less will they wish to bring up specimens of excreta for examination. Secondly, to make certain of finding the bacilli, if they are still present in the biliary passages, somewhat frequent examinations would seem necessary, as the organisms appear to be eliminated only at intervals in many cases. Thirdly, and this appears a point of special difficulty, what is to be done with a person who still harbours the bacilli? If he is not in any way ill himself he will certainly resent any attempt to immure him once more in hospital, and if such were insisted upon, patients would be very unlikely to present themselves for examination after discharge. Yet without such detention effective supervision and treatment would be difficult. Further, the means of disinfecting the biliary passages at present available are not, so far as we know, at all thoroughly ascertained, but in this connexion we refer our readers to an interesting paper by Dr. P. J. Cammidge on pancreatitis as a sequel of typhoid fever which will be found on p. 1739 of this issue of THE LANCET. It will on many grounds be especially interesting to note the results obtained in Bristol in dealing with this source of infection, and we can only hope that such success may attend the procedure as to encourage other localities to inaugurate a similar policy.

THE INCIDENCE OF PHTHISIS IN CALCUTTA.

WE have received a reprint of a paper[1] read by Dr. T. Frederick Pearse, health officer of Calcutta, before the Medical Section of the Asiatic Society of Bengal on the incidence of pulmonary tuberculosis in Calcutta. He alluded to the difficulty in obtaining statistics in regard to the general population for any part of India, except possibly Calcutta and the city of Bombay, since the recorded causes of deaths are merely those given by the friends and relatives at the burning ghats and burial grounds. The death-rates for pulmonary tuberculosis given by the Sanitary Commissioner with the Government of India are 0·17 per 1000 for the British army, 0·52 for the native army, and 3·21 in the jails. In Calcutta the officers of the Plague Department make inquiries into the deaths occurring in that city, and the mortality statistics of the city are corrected according to the information obtained. From a study of the figures since 1905, the year in which they were first available, Dr. Pearse finds that the death-rate from tuberculous disease averages 2·5 per 1000. A further analysis of the figures shows that the rate among males is only 2 per 1000, that for females being 3·5. Another interesting fact elicited is that the death-rate among Mahomedan females is 5·8 per 1000, as compared with 3 per 1000 among the Hindu women. These figures are much higher than those for England and Wales, where the general death-rate for the period 1901–05 was 1·9 per 1000. The high mortality among women in Calcutta is attributed to the conditions of life, notably to the deficiency of fresh air. Dr. Pearse's figures should serve to draw attention to this subject with a view of improving these conditions and lessening the mortality.

TUBERCULOUS MEAT.

WE have received a copy of a pamphlet on the subject of tuberculous meat published by the Public Health Department of the Corporation of London, with the object of rendering widely known, more especially to those concerned in the supply and sale of meat, the indications of tuberculosis both in the carcass and in the living animal. The Corporation of London has for many years past instituted legal proceedings against farmers, butchers, and other persons sending diseased or unwholesome meat into City markets, or for exposing it for sale. It appears that in many instances the offence is due to gross carelessness, but sometimes to ignorance of the symptoms and appearances of tuberculous disease. In order to supply the necessary information as to these matters, Dr. William Collingridge, the medical officer of health of the City of London, contributes to the pamphlet a description of the signs of tuberculosis in the carcass and organs. He describes in popular or butcher's language the appearances of tuberculous lesions in beef and pork, especially those in the glands and in the lungs, as well as those of pleural and peritoneal adhesions. He cautions butchers against the process of "stripping"—i.e., removal of "skin" from the inside of the ribs or flanks with the view of removing the

[1] Indian Medical Gazette, No. 4, April, 1909.

signs of disease—and points out that the Local Government Board has ordered that "stripping" in the case of foreign dead meat shall be sufficient reason for condemnation. The symptoms in the living animals are detailed by Mr. James King, veterinary inspector to the Corporation of London; the symptoms of pulmonary disease are given and the characters of lesions of the udders are outlined. The owner of cattle which present the symptoms described is recommended to seek the advice of his veterinary surgeon. An extract from leaflet No. 100 issued by the Board of Agriculture and Fisheries (revised, May, 1907) is also given describing the characters of tuberculosis in pigs, giving warnings against feeding the animals on refuse milk and diseased offal from tuberculous cattle, and recommending improved sanitation and periodic disinfection of premises where pigs are kept. Some of the sections of this pamphlet are dated 1903, but it appears to have been re-issued with the addition to which reference has just been made. It is a very useful and instructive little document and one which cannot be too widely circulated amongst those for whom it is written. We gather that copies can be obtained on application to the town clerk at the public health department at the Guildhall.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

THE principal amounts received at the Mansion House or notified directly to us as having been collected on behalf of the Fund up to Tuesday evening last are a little below previous receipts; but the collections of smaller size show no abatement, and the total is about the same as it was last year at this date.

THE King has given to Mr. Arthur Andrew Morrison, M.D. Aberd., surgeon to the Deaconesses' Hospital at Alexandria, His Majesty's Royal licence and authority to accept and wear the Insignia of the Fourth Class of the Royal Order of the Crown, conferred upon him by the German Emperor.

THE Prince and Princess of Wales, as President and Lady President of the League of Mercy, have issued invitations to a garden party at Marlborough House on Wednesday, July 7th, at 4 o'clock.

Dr. William Stirling, Professor of Physiology in the University of Manchester, has been elected a foreign corresponding member of the Reale Accademia di Medicina of Turin.

THE NATIONAL ASSOCIATION FOR THE PREVENTION OF CONSUMPTION AND OTHER FORMS OF TUBERCULOSIS.

(*Continued from p. 1711.*)

LAST week we described the very practical exhibition which under the auspices of the National Association for the Prevention of Consumption and other Forms of Tuberculosis has been held during the past fortnight at the Art Gallery, Whitechapel. It remains to give some account of the conference and lectures which have been given in connexion with the exhibition.

The public has, we believe, now realised the necessity for combating the terrible scourge which, it is calculated, exacts a death-toll from the world of 5,000,000 every year; for, to put it in Mr. Burns's striking way when he opened the exhibition on June 2nd, "a London perishes annually from one disease, tuberculosis." We in this country, where the figures are steadily and greatly improving, lose a population equal to that of York. London alone has 9176 deaths from tuberculosis, which means that more people die from consumption during any one year than officers and men were killed in the South African war. One of the most satisfactory parts of Mr. Burns's opening speech was the statement that he was there on behalf of the Prime Minister especially to identify him and the Government with the National Association in the good work which it was undertaking. His own department, he said, was doing its portion of the public work. It had issued a monumental report by Dr. H. T. Bulstrode, and what that report had not done he thought the book of his present chief medical officer, Dr. A. Newsholme, had secured. The Food Protection Regulations Act had done a great deal to stop unsound meat coming into this country, and he believed that by a more rigid administration of that Act and the Sale of Food and Drugs Act, through the agency of local authorities, much good would be done. He hoped that before this session ended the Housing Bill would be on the Statute Book, and he was glad to say that the Milk Bill had been more favourably received than he had hoped for. He trusted soon to follow up the Notification of Tuberculosis Order by a circular to Poor-law authorities on the conditions under which Poor-law relief should be given to outdoor consumptive paupers.

The Annual Meeting.

The tenth annual meeting was held on June 4th and was presided over by Lord BALFOUR OF BURLEIGH, the chairman of the council of the association, among those present being Sir Constantine Holman, Dr. Theodore Williams, Dr. A. Ransome, Dr. R. W. Philip, and Miss Broadbent. In moving the adoption of the report the Chairman said that there was no subject more important to the well-being of the nation than the prevention of the ravages of consumption in all its forms. Public attention had at last been arrested and directed to the question, and the association had chosen an appropriate time to hold its exhibition. People were beginning to recognise that there were methods not difficult of adoption by which all forms of pulmonary disease might be successfully combated and many lives saved to the State. Nothing was more remarkable than the awakening of all our Government departments during the past few months in connexion with the subject. The exhibition, he said, brought directly to the attention of those who were principally concerned, in the most conspicuous and helpful manner, the things of which they should take note, and it was a most hopeful fact that on the opening day 5000 people had passed the turnstiles. In no department of medical science had greater strides been made than in the prevention and cure of tuberculosis. The only matter for regret in the council's report was the statement that the publication of its journal had been stopped owing to financial reasons. There was, he said, no institution which did a greater work for the well-being of the population than the National Association for the Prevention of Consumption, and he appealed earnestly to everyone who was interested in the subject to strengthen the hands of the association.

Dr. THEODORE WILLIAMS, vice-chairman of the council, who seconded the motion, said that a very satisfactory reduction of consumption had been effected in this country of late years, the death-rate having been reduced to rather less than one-half of what it had been. To abolish the disease from the land might not be possible, as it would imply the abolition of poverty and misery of all sorts and the settlement of the housing question, but he had no doubt that a still further reduction would take place in the future.

In our report of the exhibition we drew attention to some of the more popular exhibits, and said that they had a more potent effect upon the minds of the really poor or ignorant than the scientific part of the exhibition. We are glad, therefore, to know that some of the members of the National Association share our convictions. Dr. R. W. PHILIP, in moving the addition of names to the list of vice-presidents and members of the council, incidentally remarked that in future exhibitions more space should be devoted to the practical aspects of the question, even at the sacrifice of the scientific and statistical aspects. The names of Mr. D. Shackleton, M.P., Dr. Arthur Ransome, Sir J. W. Moore, Professor G. Sims Woodhead, Dr. J. C. Thresh, Dr. Jane Walker, Dr. H. W. McConnel, and Miss McGaw were added to the list of members of the council, and those of Dr. Dawson Williams, Sir Alexander Kinloch, Sir John McFadyean, Dr. Arthur Newsholme (medical officer to the Local Government Board), Mr. J. Patten McDougall (Registrar-General for Scotland), Mr. T. J. Stafford (medical

commissioner to the Irish Local Government Board), Dr. J. Niven (medical officer of health of the city of Manchester), Dr. E. W. Hope (medical officer of health of the city of Liverpool), and Professor S. Delépine (professor of pathology in the Victoria University) to the list of vice-presidents.

The Conference.

At the conference, which was held from June 8th to 10th, the subjects of discussion fell under the heads of (1) the Detection of Consumption, (2) the Treatment of Consumption, and (3) the Prevention of Consumption. It was attended by a large number of delegates from public health authorities throughout the kingdom. On June 8th Sir T. CLIFFORD ALLBUTT, Regius professor of medicine in the University of Cambridge, presided. In opening the discussion, he said that his long professional life extended back to a time when neither a knowledge of the nature of the disease nor an efficient practice of its therapeutics really existed. Scientific knowledge of the treatment of phthisis dated from 1882, when Koch discovered the bacillus of tuberculosis. Referring to the treatment of the disease, he pointed out the need of some degree of segregation for advanced and incurable cases in order that infection might not be spread. Milk, which was an important factor in the transmission of the disease, should be under rigorous supervision as regarded supply and transmission. At the same time he warned his hearers that if costly provisions were too quickly forced upon farmers and dairymen any good purpose would be defeated.

Dr. H. SCURFIELD, medical officer of health of Sheffield, read a paper on the Compulsory Notification of Tuberculosis and its Value. In it he described the procedure which had been adopted at Sheffield. For the examination of sputum arrangements were made by the corporation with the bacteriological department of the University of Sheffield. On the first visit of an inspector to a house where a case was notified, a history of the case was obtained and a paper detailing advice was given to the sufferer. The poorer classes were supplied with pocket spittoons. The case was revisited at regular intervals and where found necessary the apartment or apartments were disinfected. Hospital accommodation was provided for both male and female patients. This served three purposes: (1) it educated the patients; (2) it gave the relatives a rest and an opportunity of thoroughly disinfecting the home; and (3) it enabled suitable cases to be selected for sanatorium treatment. Treatment on sanatorium lines was also given in the Sheffied Royal Infirmary and in the workhouse hospitals. He found no opposition to notification. One point upon which he laid great stress was that patients should be taught to clean their own spittoons and generally to help themselves, as in many sanatoriums everything was done for patients, with the consequence that when they left these institutions and returned home they were quite helpless.

On the same day Dr. PHILIP read a paper on the Dispensary System, and Miss CUMMINS, lady almoner at St. Thomas's Hospital, a paper on Consumption and Hospital Out-patient Departments.

On June 9th Dr. ARTHUR LATHAM, physician to St. George's Hospital, opened a discussion on the Sanatorium. He pointed out that more coördination was needed in the organisation of sanatorium treatment, and he thought it would be better to build sanatoriums for large numbers of people rather than to have a great number of small institutions scattered up and down the country. He commended the insurance system adopted by post-office employees and hoped the scheme would be extended to industrial concerns.

Dr. M. S. PATERSON (Frimley Sanatorium) said that the real test for the sanatorium treatment of a patient was his general condition. It was a mistake to think that early cases were necessarily the most suitable for sanatorium treatment. A man with extensive disease who had been able to maintain himself for two years and still remain in good condition had a better right to treatment in a sanatorium than one in an earlier stage of better physique with no stamina. Dealing with the subject of graduated work for patients, he said that great care was necessary in the selection of patients. In the system adopted at Frimley a commencement was made by walking exercises of gradually increasing distances, basket carrying followed, and later the use of tools of gradually increasing weight. The tests for the higher grades of work were a satisfactory temperature, good appetite, and a general sense of feeling well. Physical improvement had a psychological effect; sullen and apathetic persons became transformed into lively and cheerful individuals. It was most important that the work should have a definite object, as patients hated nothing as much as work which was of no practical utility. Patients with a temperature of 99° F. and a headache required absolute rest. If while working the temperature rose to 99° or over, the patients should be put to bed. Those on light work often did not improve rapidly because the work was not hard enough to bring about its good result; with slightly harder work improvement followed in many cases.

Dr. JANE WALKER, medical superintendent of the East Anglian and Maltings Farm Sanatorium, Nayland, described the work done in the institution. In her experience the rest treatment in sanatoriums was demoralising and she insisted on work for both sexes. At Nayland, in addition to domestic tasks the work consisted of lace-making and gardening.

Dr. H. W. MCCONNELL (Matlaske Hall, Norwich) contributed a paper on the After-Care of Sanatorium Patients.

The LORD MAYOR of LONDON, who presided on June 10th, introduced further discussion by saying that nothing had conduced to the increase of consumption more than ignorance.

Dr. DUNCAN FORBES, medical officer of health of Brighton, read a paper on the Sanatorium as an Educational Agency.

Dr. E. W. HOPE, medical officer of health of Liverpool, discussed the right connexion of the municipality with the prevention of consumption. He showed how by improving the housing conditions in the city of Liverpool tuberculosis had been successfully combated. Quoting the report of a special commission of inquiry which was held 60 years ago into the health of the great towns of England, he said that from a sanitary point of view Liverpool was then behind all other towns. From that time onward Liverpool had been the seat of war against tuberculosis. The report referred to showed that 100,000 persons in Liverpool were living in houses totally unfit for human habitation, 40,000 living in cellars. Nothing could be more useful or instructive than the study of the difficulties encountered in remedying this state of things, from which it would be seen that the gradually increasing diminution of the evils was accompanied by coincidental decline of tuberculosis. Some 2000 dwellings had been erected in Liverpool upon sites of areas on which insanitary dwellings had been destroyed, and these dwellings had been reserved only for the people dispossessed. In 1907–08 the phthisis mortality rate in the corporation buildings was 1·35 per 1000, actually lower than that of the city taken as a whole. Besides those houses designed for the very poor, 1400 well-constructed four-roomed cottages under £12 a year rental had been erected in the last seven years by private enterprise on the outside of the city, and 5000 houses at a rental of between £12 and £18. In all these houses the amount of phthisis was extremely small. Since 1864 the number of insanitary houses demolished by the corporation was approximately 8000, at a total cost, including schemes in hand, of £919,084. The work of the Liverpool corporation in this matter necessitated a large staff for the purpose of enforcing regulations, but breaches of the law had become less and less frequent, and it was quite clear that time, patience, and knowledge could satisfactorily improve the most insanitary conditions.

Dr. J. D. STANLEY (Birmingham) gave an interesting description of the municipal sanatorium belonging to the Birmingham corporation which had been built on the Cotswold Hills.

Dr. J. E. SQUIRE, C.B., speaking with regard to tuberculosis in schools, said that infection could be rarely traced to the school. The real cause was the home, and school authorities should have some power in controlling infection from that source. Parents ought to recognise their responsibility and give something in return for free education. Something in this way they could do by looking after their children better.

On the afternoon of June 10th there was a demonstration of Meat Inspection by Mr. J. King, chief veterinary inspector at the Metropolitan Cattle Market, and during the period that the exhibition has remained open popular evening lectures have been given by Professor Sims Woodhead, Dr. Hector Mackenzie, Dr. Theodore Williams, Dr. Frederick Rose, Dr. Newsholme, Dr. Nathan Raw, Mr. P. M. Short, and Mr. C. Garland.

Up to the time of going to press more than 50,000 persons have passed the turnstiles.

SANITATION IN INDIA.

VII.[1]—LUNATIC ASYLUMS.

Bengal.

Colonel R. Macrae, I.M.S., the Inspector-General of Civil Hospitals, Bengal, furnishes the annual returns for the lunatic asylums in Bengal for 1907. The number of lunatics in the Bengal asylums on Jan. 1st, 1907, was 836, and on Dec. 31st the number was 852. The admissions numbered for the year 181, or seven less than in 1906. The numbers discharged were 104, against 136 in 1906. This decrease in the number of the discharged is attributable to the survival of a large number of chronic cases at the Berhampore asylum who will never be fit for discharge. The total number discharged cured fell off mainly for this reason from 89 in 1906 to 69 in 1907, the percentage of recoveries on daily average strength being 10·76 and 8·12 respectively. However, the result compares favourably with the rate of recovery in English asylums, which, after excluding the statistics of the idiot establishments, was 8·31. With respect to the sickness and mortality, the total number of hospital admissions fell from 850 in 1906 to 555 in 1907, the largest reduction taking place at Berhampore, many sanitary improvements having been carried out at the asylum during the year 1907. The drainage has been remodelled, whilst at the suggestion of the Inspector-General closed-in verandahs have been entirely opened up and doors removed, thus immensely improving the ventilation. Tuberculous cases were all isolated and segregated, and better bathing and sanitary arrangements were made. That these wise improvements resulted in the better state of general health was shown by the fact that the female inmates did not share in this improved health, but, be it remarked, the portion of the old asylum which they occupy was not readily susceptible of much improvement. At Patna the admissions rose from 119 in 1906 to 152 in 1907. Bowel complaints were more than twice as common in 1907 than in 1906. The Inspector-General during his annual inspection, however, noticed defects in the drinking water. These have since been remedied, and in consequence the superintendent reports a noticeable reduction in this class of disease. At Berhampore the bowel complaints showed a decided falling off, the admissions being 31, against 101 in 1906. This was due to the improvements mentioned above, and also to the fact that the patients were regularly examined and treated for intestinal parasites. Tuberculous phthisis as usual accounted for a large number of admissions. Lunatics all the world over are, however, extremely liable to phthisis. Fever was less common, there having been 185 cases, against 267 in 1906, this favourable result being probably due to the prophylactic issue of quinine during the unhealthy months. The total deaths on daily average strength was 8·94 per cent., against 10·27 in 1906, and 9·19 in 1905. This death-rate was lower than that of the asylums in Eastern Bengal and Assam, United Provinces, the Punjab, and Madras, and was even less than that recorded in 1906 in the county and borough asylums in England (10·11).

With reference to the form of lunacy with which the asylums had to deal, mania was the most frequent, furnishing 54·08 per cent. of the cases. Melancholia accounted for 20·92 per cent. Other forms were those of general paralysis of the insane (one case), mental stupor (two cases), and delusional insanity (three cases). Physical causes accounted for 41·84 per cent. and moral causes for 12·24 per cent. of the admissions, whilst the cause was not known in 45·92 per cent. of the cases. 21 cases were attributed to *ganja*. The manufacturing department of the jails of the province was engaged in road-making, carpentering, and basket-making. The Inspector-General last year suggested the discontinuance of labour in connexion with mustard oil pressing at Berhampore; the superintendent of the jail reports that this suggestion, where carried out, has been decidedly beneficial to the patients who are employed instead on other more suitable and genial occupations. At present schemes for a central lunatic asylum for natives and of another for Europeans at Ranchi are under consideration; both these asylums have been planned on the villa colony system, and if carried out as designed will be superior to any similar institution ever built in Asia. Finally, the Inspector-General acknowledges fully the efforts made by the superintendents to render the lives of the lunatics contented, comfortable, and happy. It must be a pleasure to work under so efficient an Inspector-General as Colonel Macrae, who has succeeded in rendering a most interesting report on a subject that does not lend itself naturally to exciting interest in the average reader. This excellent report concludes with the usual appendices.

Eastern Bengal and Assam.

The statistical returns of the lunatic asylums for this province for 1907 are furnished by Colonel David Wilkie, I.M.S., the Inspector-General of Civil Hospitals, Eastern Bengal and Assam. There are two asylums in the province—namely, one at Dacca, the other at Tezpar. The number of inmates remaining in both asylums on Jan. 1st, 1907, was 472, against 425 in 1906. During the year 104 lunatics were admitted, against 147 in 1906; but though the number of admissions was less, the total population treated was slightly greater, being 576 against 572, whilst the daily average number rose from 454·68 to 475·91. This is explained by the fact that the number under detention at the commencement of the year was larger than in 1906. The number discharged was 55, including three escapes from the Tezpar asylum, as against 72 with three escapes in 1906. Of these, 36, or 7·56, were "cured," 13 were "improved," and three "unimproved" made over to their friends.

As in former years, mania was the chief form of insanity, 73·08 of the admissions being classified under this head; melancholia accounted for 15·38 per cent. Of the total 104 admissions, the causes of insanity were known in only 43 cases, or 41·34 per cent.; in 30 of these 43 cases the cause was physical, and in the remaining 13 it was moral. Amongst the specific causes, *ganja* smoking was by far the most frequent.

Central Provinces.

Colonel P. A. Weir, I.M.S., the Inspector-General of Civil Hospitals, Central Provinces, furnishes this report. As regards the number of lunatics for the year 1907, we find the aggregate total admission in 1907 at Nagpore asylum was 85, of which 34 were males and 51 females. At the Jubbulpore asylum 15 males and one female were admitted. The daily average strength was 317·15, against 298·53 in 1906, the increase of 19 being mostly made up of females who numbered 14 to 5 males. With respect to the disposition of the two sexes, the necessary accommodation being at last completed on July 1st, 1907, all the insane females at Jubbulpore, 36 in number, together with their attendants, were transferred to the Nagpore asylum, and the female side at Jubbulpore thus became available for receiving males. There was slight overcrowding on the male side at Jubbulpore until the transfer of the females. It had since been decided to transfer all the Jubbulpore males to Nagpore so as to give up the former asylum entirely; this, it was hoped, would be possible by October or November of 1908. The provision of the necessary additional accommodation for patients and staff is being proceeded with.

There were 28 cures, 14 at each asylum, against 17 in 1906, and three were discharged improved. The deaths were 26 against 31 in 1906, the chief causes being epilepsy. With respect to the form of insanity exhibited, mania as usual headed the list, amounting to about 75 per cent., melancholia causing 5 per cent., dementia 11 per cent., idiocy 8 per cent., and other forms 1 per cent. Of those discharged recovered or improved as much as 87 per cent. had suffered from mania. With regard to the causation of the insanity in 81 per cent. causes were assigned; of these, 28 per cent. were attributed to the use of *ganja* and 10 per cent. to that of alcohol.

United Provinces of Agra and Oudh.

The report of the asylums of the United Provinces of Agra and Oudh for 1907 is furnished by Colonel R. D. Murray, I.M.S., Inspector-General of Civil Hospitals, United Provinces. This report shows that the total admissions fell from 328 in 1906 to 273 in 1907, and the total population from 1537 to 1481. There was also a decrease in the daily average strength. The number of cures increased from 124 to 146, the number of deaths fell from 130 to 110, and the daily average sick increased from 90·18 to 99·83. There was a slight increase in the percentage of cures to the daily average strength, but the percentage of cures to admissions

[1] Nos. I., II., III., IV., V., and VI. were published in THE LANCET of April 10th (p. 1067) and 24th (p. 1199), May 1st (p. 1289), 15th (p. 1412), and 22nd (p. 1480), and June 5th (p. 1630), respectively.

rose from 13·33 to 20·67. The percentage of deaths to the daily average strength fell from 10·69 to 9·13. The death-rate in the English asylums during 1906 was 9·85 per cent. on the daily average number resident, so that the asylums of these provinces compare very favourably indeed with those of England.

As regards deaths, the high death-rate of Agra for 1906 of 85 has been reduced in 1907 to that of 49. This number would have still further been reduced to 30 if influenza, which was very prevalent in Agra, had not unfortunately broken out in the asylum in November. The 19 deaths from influenza out of the 62 admitted to hospital occurred during the last six weeks of the year, and were immediately due to the extremely rapid onset of pneumonia. It was treated throughout as an acute infection, and was confined to that section of the asylum where the first case appeared. Amongst the facts noted with regard to this epidemic was the experience that in many cases where the patients survived over the third day symptoms of enteritis supervened. The influenza death-rate was 30 per cent., but, as the Inspector-General points out, it must be remembered with reference to this that the patients were suffering from insanity, which reduces the power of resistance to the disease to the lowest. Of the remaining 30 deaths dysentery accounted for ten. There was only one death from heat-stroke, against 18 in 1906. A great improvement in the health returns of the Benares Asylum has been effected by the reintroduction of the dry earth system of conservancy for the flushing system; the latter was stopped in June, 1907. During the flushing system the health of the asylum remained as bad as it had been since the system was introduced, and 21 deaths occurred during the first six months of the year. With the introduction of the dry earth system the health of the asylum has gone back to its former excellent standard, and though 14 deaths occurred during the second half of the year, some of them contracted their ailments during the first six months, whilst no fewer than six were from causes which were non-preventable. There is now every reason to hope that the asylum has reverted to its former healthy condition. Colonel Murray has furnished an excellent report.

EGYPT IN 1908.

(*Concluded from p. 1632.*)

Sir Eldon Gorst's report on Egypt in 1908 is so succinctly expressed that compression within the limits of an ordinary review is a task of no small difficulty. In some places the only way to do justice to the author would be by wholesale transcription. All the subjects dealt with are not, of course, topics for discussion in a medical journal, but if all that are unsuitable were to be eliminated in the present case there would nevertheless remain such a mass of suitable topics that adequate notice of many of them would have to be foregone. To continue our detailed notice:—

Hashish.—It is notorious that the employment of Indian hemp as a narcotic and stimulant has long been widespread throughout Egypt, but until lately the efforts of the authorities to prevent or restrict the practice have been perfunctory. The subordinate officials charged with the execution of the repressive measures being for the most part consumers of the drug themselves were by no means zealous in carrying out the more or less half-hearted orders they received. Of recent years, however, a great improvement has taken place in this respect. Hashish is not produced in the country, the supply being introduced entirely by smugglers, and serious attempts to check the introduction are now made at the various custom houses as well as by the coastguard. Sir Eldon Gorst does not state the quantity of hashish that was seized and confiscated in 1908, but in 1907 it amounted to 16,290 kilogrammes, or about 320 cwt., while the previous year the total was 15,380 kilogrammes. The daily dose consumed by a *hashash*, or person addicted to the drug, being comparatively infinitesimal, an idea can be formed of the number of consumers as well as of the magnitude of the trade which can support such drains on its resources. During the three years ending 1908 no fewer than 6095 establishments where hashish could be procured were permanently closed by order of the tribunals, 273 of these dens being the property of Europeans. The proportion of hashish patients to the total number admitted to the lunatic asylum was 8 per cent. in 1908, whereas during the preceding triennium the yearly average was 14 per cent. As Sir Eldon Gorst observes: "This is a remarkable reduction and may be regarded as encouraging, although too much stress must not be laid on the figures for a single year. It would appear to show that an efficient coastguard service, which is to-day almost entirely occupied in preventing the smuggling of hashish, coupled with the adoption of strict police measures in the towns, has succeeded in limiting very materially the facilities for indulging in this lamentable habit." The reduction of hashish lunacy is no doubt a matter for congratulation, but on the other hand the unwonted consumption by the native Egyptian of spirituous liquors affords food for reflection. Formerly the *fellah* was the most temperate of mortals, but unhappily this excellent characteristic is no longer deserved. The drinking habit is in process of formation in Egypt. In the year 1908 hashish caused 36 admissions to the lunatic asylum, but there were 35 due to the abuse of alcohol.

Plague and cholera.—In a short section Sir Eldon Gorst mentions the occurrence of 1511 cases of plague distributed over 142 centres of infection. In 1907 there were 1253 cases in 107 centres. It is now nine years since the present infection of the country occurred, and until 1906 it was practically confined to the Delta and Middle Egypt, where the disease was almost invariably of the bubonic form. When, however, Upper Egypt was invaded it assumed the very infectious and fatal pneumonic form. The concealment of cases is still very prevalent amongst all classes of the population. With reference to this unfortunate tendency Sir Eldon Gorst observes: "In this, as in other epidemics, the success or failure of the measures prescribed by the Government must very largely depend upon this important question of obtaining early information, and it is in overcoming ignorance and prejudice in this respect that the most difficult task of the officers of the Sanitary Department consists." Although cholera was very prevalent last year in the Hedjaz, and subsequently a few cases occurred in the quarantine camp at Tor, no invasion of Egypt took place. The disease was still present in Southern Russia when Sir Eldon Gorst was writing his report, but so far "the pilgrim season had shown no signs of cholera infection."

Village barbers.—One of the most urgent needs for Egypt is the provision of efficient medical aid for the great mass of the population. The medical officers of the Sanitary Department do what they can, but their number is altogether inadequate. The village barber is still the universal refuge in sickness, and it is not too much to say that his ministrations are worse than useless. On this head Sir Eldon Gorst's remarks are so clear and to the point that no condensation of them is possible.

> The office of village barber is an institution of great antiquity in Egypt. Without going into this functionary's history it may be said that his duties consist principally in performing vaccination and various minor operations, sending in returns of births and deaths, and furnishing other information to the district authorities. He obtains no remuneration from the Government, but receives small fees from his clients, and his interests are closely bound up with the goodwill of the village Omdeh. The functions and responsibilities which he exercises have not contributed to independence of character or to a sense of duty to the superior authority which appoints but does not pay him. The rank and file of this class are consequently of indifferent quality, and really trustworthy men are few and far between. Last year the experiment was made of utilising the village barbers in connexion with the special measures for dealing with pneumonic plague in Upper Egypt, and a small sum was devoted to paying a few selected barbers in each province, in order to obtain more speedy and trustworthy information than would be furnished by the villagers, and to encourage the early notification of suspicious deaths or illness in the barber's village or its neighbourhood. In most cases the offer of a small fixed salary was sufficient to obtain all that was required. Reports from the provincial authorities are unanimous in testifying to the advantage of the system, and in recommending its further extension on a permanent basis. It must be admitted, however, that, apart from financial considerations, the general mass of the barbers are not as yet worthy to be taken into the Government service. The majority are illiterate, many are very inefficient, and in some cases men of indifferent character have been appointed, in the absence of more desirable candidates.

The second part of Sir Eldon Gorst's report is concerned with the Soudan and is drawn up on the same lines as the first. Under the heading, "Public Health," the writer states that the country has been free from any serious epidemic of infectious disease during the past year, but Dr. J. B. Christopherson reports minor outbreaks of cerebro-spinal meningitis, infectious pneumonia, small-pox, chicken-pox, diphtheria, and dengue, and there have also been isolated cases of kala azar, Malta fever, and blackwater fever. At

least five cases of kala azar have been treated in the Khartoum hospitals, and Sir Eldon Gorst much regrets to record the death of Captain Craik, after being invalided to England, a victim to this malady, for which, he adds, no cure has yet been discovered. A medical officer is being sent to study the disease in Kassala where most of the cases have originated. The number of out-patients treated during the year has increased from 94,051 in 1907 to 121,214, that of in-patients remaining at a little over 7000. The arrangement whereby quinine can be procured at post-offices is evidently appreciated by the public, 6350 boxes having been sold in 1908. The new hospitals at Port Soudan and Atbara are practically completed and the new Khartoum hospital should be ready for occupation during the present year. Dr. Christopherson considers that attempts to train native women in nursing have so far proved a failure and that Arab and Soudanese boys make better hospital attendants. In conclusion, Sir Eldon Gorst states that Captain H. Ensor, R.A.M.C., has submitted a final and invaluable report to the Soudan Sleeping Sickness Commission, the result of his investigations in the Southern Bahr-el-Ghazal. Captain Anderson, R.A.M.C., who has now succeeded him, will meet Sir David Bruce at Gondokoro in order to confer with him upon the general situation.

We regret to say that Sir Eldon Gorst largely ignores the prevention of disease in his report. He notices most subjects and dwells at great length upon some of them, notably the law and education, but his observations under the heading of public health are not only exceedingly brief, but refer exclusively to the cure of maladies already contracted, and make no reference whatever to the adoption or otherwise of sanitary measures properly so called. It is true that the drainage of Cairo is mentioned, and there is also some allusion to overcrowding and an improved water-supply, but these highly important matters are only lightly touched, and it seems doubtful whether their connexion with prolonged life and a lower death-rate is thoroughly appreciated. No doubt much good sanitary work was done during the year, but we are not told so. That a great deal remains undone is evident from the letters of our Sanitary Commissioner. In Egypt the infant mortality is appalling. We should be glad to learn what has been done towards diminishing it. Are medical officers of health appointed in sufficient numbers, and have they been given power to enforce the requirements of elementary hygiene? Has anything been done to ameliorate the condition of the innumerable *birkets*, which serve alike as dumping-ground for filth of every description and as reservoirs for drinking water? It would be easy to multiply such questions, but the foregoing will suffice. It is high time that persons in authority should learn that nothing on earth is so insanitary as disease, and that the primary object of every true sanitarian is its extinction. Incidentally it is well to cure disease, but the real business of a medical man is to prevent disease occurring. It is better to prevent one case than to cure ten. Not many years ago Egypt was looked upon with suspicion as a place of residence. Insurance companies used to charge extra premiums for permission to reside there. Have the conditions that make for a healthy life improved since the British occupation? Apparently they have to judge by the yearly increasing crowds of visitors; but, on the other hand, the state recorded by our Sanitary Commissioner is, to say the least, unsatisfactory.

THE INDIAN MEDICAL SERVICE: ANNUAL DINNER.

THE annual dinner of the Indian Medical Service was held at the Gaiety Restaurant, London, on June 10th, the chairman being Surgeon-General G. Hay, in the absence of Sir George Birdwood, K.C.I.E., through ill-health. The guests invited were General Sir O'Moore Creagh, V.C., K.C.B., the Commander-in-Chief in India elect; Sir William Church, President of the Royal Society of Medicine; Mr. Henry Morris, President of the Royal College of Surgeons of England; Mr. Austin Low; Dr. Squire Sprigge, the Editor of THE LANCET; and Dr. Dawson Williams, the Editor of the *British Medical Journal*. The following officers were present:—

Surgeon-Generals.—P. H. Benson, A. M. Branfort, C.I.E., W. R. Browne, C.I.E., J. Cleghorn, C.S.I., J. P. Greaney, L. D. Spencer, P. W. Sutherland, and B. Williamson.

Colonels.—W. E. Cates, D. E. Hughes, C. H. Joubert de la Ferté, H. G. L. Wortabet, and W. A. S. Wynne.

Lieutenant-Colonels.—W. G. Alpin, N. L. Bartholomeusz, A. T. Bown, W. J. Buchanan, Sir R. H. Charles, K.C.V.O., A. Duncan, G. A. Emerson, P. J. Freyer, G. H. D. Gimlette, H. Herbert, R. A. K. Holmes, E. R. Johnson, D. F. Keegan, S. Little, C. C. Manifold, R. J. Marks, C. Monk, J. Moorhead, J. O'Brien, A. Stephens, T. W. Stewart, A. W. F. Street, C. M. Thompson, W. H. Thornhill, D. Warliker, G. Waters, A. H. Williams, and F. W. Wright.

Majors.—H. Bamfield, A. E. Berry, J. F. Blood, C. Bowle-Evans, W. S. Caldwell, C. F. Fearnside, J. Fisher, P. C. Gabbett, G. G. Giffard, C. H. James, A. J. Macnab, W. Selby, D.S.O., G. B. Smith, F. W. Watling, C. G. Webster, and E. H. Wright.

Captains.—W. R. Battye, F. F. Elwes, G. King, J. T. Leary, R. A. Lloyd, J. L. Lunham, J. H. Murray, W. S. Patton, A. E. H. Pinch, M. F. Reaney, W. S. J. Shaw, G. Tate, and M. H. Thornely.

As is now the rule at this most pleasant and cordial of dinners there were no speeches. Surgeon-General Hay gave the toast of "The King" in a sentence, and introduced in another sentence as the guest of the evening Sir O'Moore Creagh, the new Commander-in-Chief in India. Sir O'Moore Creagh's remarks were brief as well as felicitous, and the company then resolved itself into an informal and delightful meeting of old friends. Mr. P. J. Freyer (Colonel, I.M.S., retired) earns the thanks of the service for the excellent way in which the annual dinner is organised by him.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary Comitia was held on Wednesday, June 16th, Sir R. DOUGLAS POWELL, Bart., K.C.V.O., the President, being in the chair.

The following list of lecturers was announced:—Dr. Joseph Shaw Bolton, Goulstonian lecturer; Professor W. Osler, Lumleian lecturer; Professor Sir T. Clifford Allbutt, Fitz-Patrick lecturer; Dr. F. W. Mott, Oliver-Sharpey lecturer; Dr. Wm. Bulloch, Horace Dobell lecturer; Dr. Frederick W. Andrewes, Croonian lecturer (vice Dr. A. Gamgee, deceased); and Dr. Henry Head, Croonian lecturer for 1911.

The REGISTRAR (Dr. E. LIVEING) thanked the President, Sir W. S. Church, and the Senior Censor (Dr. Norman Moore) for the kind way in which they had spoken and the proposals they had made at the last Comitia, and he also thanked the Fellows for the manner in which they had received those proposals.

The College seal was affixed to an address to the University of Cambridge on the Darwin Centenary.

The following communications were received: 1. From the Secretary of the Royal College of Surgeons of England, dated June 11th. 2. From the Rev. J. G. Geare of Farnham Rectory, Bishop's Stortford, asking leave to have a photograph of the portrait of Dr. Richard Hale (1670–1728) in possession of the College. Permission was granted.

Sir W. S. Church was appointed a representative of the College on the Court of Governors of the new University of Bristol.

A report was received from the representative of the College on the General Medical Council on the proceedings of the Council at its May session.

The PRESIDENT then dissolved the Comitia.

PRIZE-GIVING DAY AT HOSPITAL MEDICAL SCHOOLS.—Medals and prizes won during the past year will be distributed to the students of Guy's Hospital by His Grace the Duke of Devonshire at a garden party on Thursday, July 8th, at 3.15 P.M. At St. Thomas's Hospital the prizes will be distributed to the students by the Right Hon. Alfred Lyttelton, K.C., M.P., in the Governors' Hall, on Friday, June 25th. At the London (Royal Free Hospital) School of Medicine for Women Lady Northcote will present the prizes and certificates to students for 1908–09 on Friday, July 2nd, at 4 P.M. Mrs. Garrett Anderson, M.D., will take the chair. At King's College the prizes and certificates will be distributed on June 30th by Dr. H. A. Miers, F.R.S., Principal of the University of London.

Looking Back.

FROM

THE LANCET, *SATURDAY*, June 18th, 1831.

DAILY DISCHARGE OF OIL FROM THE BOWELS, AND SUGAR FROM THE URINARY PASSAGES.

There is likewise an extraordinary case in Jacob's Ward—a case I have never seen above once or twice before, and never to such an extent; it is the case of a man discharging oil from the intestines. He is labouring under diabetes also—discharging, therefore, sugar from his urethra, while, from his rectum, he pours forth oil. The case must be very interesting to chemists, on account of such a double manufacture going on; and some of our most eminent chemists—four indeed of as good chemists as are in this country, have had specimens of the oil, and they find it to be genuine oil. After a motion it flows from him liquid, and then concretes on the fæces on cooling. Of course you have all seen it swimming in the liquid contents of the vessel, of the colour of unblanched bees-wax.

A case of this kind is mentioned by Mr. Howslip, and, he says, the lady took a pint of oil, and so made no more oil. Though this looked like casting out devils by Beelzebub, yet, as I did not know what to do, I seized the fact, and gave this man six ounces of olive oil to drink; he took two ounces of it, and was sick; he took the remainder afterwards, and it staid down. He has certainly produced very little oil since. Whether that is the consequence of the oil he took or not, I do not know. He has phthisis, too, and he is thus producing a third preternatural fluid pus. Of course he must die; he has been inhaling chlorine with great advantage. It has been gradually diminishing his expectoration. He is sinking under his combined diseases, but he has now hardly any sufferings—none but his cough. I may mention that he at first began by inhaling iodine, but coughed so severely on taking the most minute quantity, even a drop, that I was obliged to give it up. The chlorine he bears well; the amount of many drops, and is greatly relieved by it.[1]

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8972 births and 3962 deaths were registered during the week ending June 12th. The annual rate of mortality in these towns, which had been equal to 14·7, 13·9, and 12·3 per 1000 in the three preceding weeks, increased again slightly to 12·6 in the week under notice. During the first ten weeks of the current quarter the death-rate in these towns averaged 14·6 per 1000; the rate in London during the same period did not exceed 14·1. The lowest recorded annual death-rates in these towns last week were 3·2 in King's Norton, 6·1 in Hastings, 6·4 in Tottenham, and 6·5 in Hornsey; the rates in the other towns ranged upwards, however, to 20·7 in Oldham, 21·1 in Stockport, 23·1 in Warrington, and 23·6 in St. Helens. In London the recorded death-rate last week did not exceed 12·2 per 1000. The 3962 deaths from all causes in the 76 towns last week showed an increase of but 68 upon the exceptionally low number in the previous week, and included 391 which were referred to the principal epidemic diseases, against 414 and 360 in the two preceding weeks; of these 391 deaths, 185 resulted from measles, 56 from diarrhœa, 55 from whooping-cough, 42 from scarlet fever, 40 from diphtheria, and 13 from "fever" (principally enteric), but not one from small-pox. The 391 deaths from these epidemic diseases last week were equal to an annual rate of 1·2 per 1000, against 1·3 and 1·1 in the two preceding weeks. No death from any of these epidemic diseases was registered last week in Brighton, Southampton, Preston, York, or in eight other smaller towns; the annual death-rates therefrom ranged upwards, however, to 4·0 in Wolverhampton, 4·5 in Salford, 4·6 in Norwich, and 5·2 in West Bromwich. The fatal cases of measles in the 76 towns, which had been 178 and 140 in the two preceding weeks, rose to 185 last week, a higher number than in any week since the early part of May; the fatal cases of this disease caused annual death-rates last week ranging upwards to 3·0 in Salford, 3·7 in West Bromwich, 4·0 in Wolverhampton, and 4·2 in Norwich. The 56 deaths attributed to diarrhœa corresponded with the number in the previous week, and were proportionally most numerous in Hanley and Rhondda. The 55 deaths from whooping-cough showed a further considerable decline from the numbers in recent weeks; the highest recorded death-rate from this disease last week was 1·5 in Middlesbrough. The 42 fatal cases of scarlet fever were within three of those returned in the previous week, and included 12 in London and its suburban districts, three in Liverpool, eight in Manchester and Salford, and two in Oldham. Of the 40 deaths from diphtheria, showing a slight increase upon the numbers in the two previous weeks, nine occurred in London and its suburban districts, four in Birmingham and its suburbs, seven in Manchester and Salford, and two both in Bradford and in Merthyr Tydfil. The deaths referred to "fever," which had been 20, 16, and 11 in the three preceding weeks, were 13 last week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2254 and 2223 at the end of the two preceding weeks, had increased to 2263 on Saturday last; 395 new cases of this disease were admitted to these hospitals during last week, against 348, 335, and 273 in the three preceding weeks. The registered deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 225 and 172 in the two previous weeks, further declined last week to 152 and were 15 below the corrected average number in the corresponding week of the five years 1904–08. The deaths in London referred directly to influenza were 13, showing an increase of three upon the number in the previous week. The causes of 25, or 0·6 per cent., of the deaths registered last week in the 76 towns were not certified either by a registered medical practitioner or by a coroner. The causes of all the deaths registered during the week were again duly certified in London, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Nottingham, Leicester, Salford, Hull, and in 52 other smaller towns; the 25 uncertified causes of death included five in Liverpool, five in Birmingham, and two each in St. Helens, Coventry, and Willesden.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 957 births and 518 deaths were registered in the week ending June 12th. The annual rate of mortality in these towns, which had been equal to 17·5, 16·7, and 16·3 per 1000 in the three preceding weeks, further declined to 14·5 in the week under notice. During the first ten weeks of the current quarter the death-rate in these Scotch towns averaged 16·7 per 1000, while in the 76 large English towns the mean death-rate during the same period did not exceed 14·6. The death-rates last week in these Scotch towns ranged from 11·6 and 12·3 in Leith and Greenock to 15·9 in Glasgow, and 19·9 in Paisley. The 518 deaths from all causes in the eight towns showed a further decline of 64 from the numbers returned in recent weeks, and included 55 which were referred to the principal epidemic diseases, against 76, 68, and 59 in the three preceding weeks. These 55 deaths were equal to an annual rate of 1·5 per 1000, against 2·1, 1·9, and 1·7 in the three previous weeks; the mean death-rate last week from these principal epidemic diseases in the 76 large English towns did not exceed 1·2 per 1000. Of the 55 deaths from these epidemic diseases last week in the Scotch towns, 22 resulted from whooping-cough, 15 from diarrhœa, five from "fever," five from scarlet fever, five from diphtheria, and three from measles, but not one from small-pox. The fatal cases of whooping-cough in the eight towns, which had been 40 and 25 in the two preceding weeks, further declined to 22 last week, of which 13 occurred in Glasgow and eight in Edinburgh. The 15 deaths attributed to diarrhœa corresponded with the number in the previous week, and included five both in Glasgow and in Aberdeen, and four in Dundee. The five deaths referred to "fever" also corresponded with the number in the previous week, and were all recorded in Glasgow; three were certified as enteric

[1] Excerpt from Clinical Lecture delivered by Dr. Elliotson at St. Thomas's Hospital on March 31st, 1831.

and two as cerebro-spinal meningitis. All the five fatal cases of scarlet fever also occurred in Glasgow; while of the five deaths from diphtheria, showing a decline of two from the number in the previous week, two were returned in Glasgow and two in Leith. The three deaths from measles all occurred in Paisley. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 109, 94, and 93 in the three preceding weeks, further declined to 80 last week, but exceeded by 29 the number in the corresponding week of last year. Of the deaths in the eight towns, 21 resulted from violence, including 13 in Glasgow and four in Edinburgh. The causes of 12, or 2·3 per cent., of the deaths in the eight towns last week were unspecified or uncertified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·6 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 22·3, 21·7, and 18·2 per 1000 in the three preceding weeks, rose again to 18·7 in the week ending June 12th. During the first ten weeks of the current quarter the death-rate in the city averaged 21·8 per 1000, whereas the mean rate during the same period did not exceed 14·1 in London and 16·3 in Edinburgh. The 143 deaths of Dublin residents from all causes during last week showed an increase of four upon the number in the previous week, and included nine which were referred to the principal epidemic diseases, against 13 and 11 in the two preceding weeks. These nine deaths were equal to an annual rate of 1·2 per 1000, the death-rate from these epidemic diseases in the same week being 1·3 in London and 1·2 in Edinburgh. Of the nine deaths from these epidemic diseases in Dublin last week, four resulted from whooping-cough, two from "fever," and one each from measles, scarlet fever, and diarrhœa, but not one either from diphtheria or small-pox. The fatal cases of whooping-cough corresponded with the number in the previous week. The 143 deaths included 23 of infants under one year of age and 39 of persons aged upwards of 60 years; the deaths of infants showed an increase upon the low number in the previous week. Three inquest cases and two deaths from violence were registered last week, and 65, or 45·5 per cent., of the deaths occurred in public institutions. The causes of four, or 2·8 per cent., of the 143 deaths registered in Dublin last week were not certified either by a registered medical practitioner or by a coroner; all the causes of the 1135 deaths registered in London last week were duly certified, whereas in Edinburgh the proportion of uncertified causes of death was equal to 3·5 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff-Surgeons: T. H. Vickers to the *Victory*; R. Hughes to the *Cressy*; F. F. Lobb to the *Antrim*; J. E. H. Phillips to the *Sappho*; R. F. Clark to the *Sirius*; E. Arkwright to the *Natal*; R. S. Bernard to the *Edgar*; and M. C. Langford to the *Hawke*. Surgeons: G. S. Davidge to the *Diamond*, additional, for the *Tyne*; E. L. Atkinson to the *Achilles*, on completing; and M. W. Haydon to the *Cormorant*, additional, for Ascension Hospital.

INDIAN MEDICAL SERVICE.

The King has approved of the following promotions among officers of the Indian Medical Service:—To be Colonel: Lieutenant-Colonel Robert William Steel Lyons (dated Jan. 13th, 1909). Majors to be Lieutenant-Colonels (dated March 30th, 1909): Fairlie Russell Ozzard, Adam Rivers Steel Anderson, John Telfer Calvert, William Symonds Percival Ricketts, Charles Malcolm Moore, Edgar Jennings, Arthur Gervase Hendley, George William Jenney, and Charles Tilson Hudson.

His Majesty has also approved of the retirement of the following officers: Lieutenant-Colonel Damodar Purshotam Warliker (dated April 1st, 1909) and Major Charles Henry Leet Palk (dated May 1st, 1909).

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st London (City of London) General Hospital: To be Captains, whose services will be available on mobilisation: Frederick William Andrewes (dated May 25th, 1909). Walter Langdon Brown (dated May 25th, 1909).

2nd London Sanitary Company: John Muir to be Lieutenant (dated May 5th, 1909).

For attachment to Units other than Medical Units.—Lieutenant John Paton to be Captain (dated Feb. 16th, 1909). The promotion to a Majority of Captain Edmond U. F. MacW. Bourke bears date Sept. 28th, 1908. Captain Frank Grégoire Proudfoot, from the 3rd Southern General Hospital, to be Captain (dated May 1st, 1909). David Gerald Kennard to be Lieutenant (dated May 17th, 1909).

VOLUNTEERS.

Royal Garrison Artillery:—5th Lancashire: Surgeon-Captain Thomas W. Butcher resigns his commission (dated March 31st, 1908).

QUEEN ALEXANDRA ROYAL MILITARY HOSPITAL.

It is officially announced that the King will be present at the opening service of the new chapel of the Queen Alexandra Royal Military Hospital, Millbank, on Thursday, June 24th.

Correspondence.

"Audi alteram partem."

THE CAUSATIVE FACTOR OF BERI-BERI.

To the Editor of THE LANCET.

SIR,—I have read with great interest your report of the meeting of the Society of Tropical Medicine and Hygiene (May 21st), and as I gather from it that there is still a marked prejudice against Dr. W. L. Braddon's theory as to the causation of beri-beri, I should like to put on record two concrete examples of outbreaks of the disease, which I think go far to prove his case.

The first is the history of an epidemic of *true* beri-beri occurring on a cable-repairing steamer belonging to the Eastern Telegraph Company, and stationed in the Red Sea, and I think it is an important point that no case of the disease had occurred on this particular ship for at least three years previously. On May 24th, 1907, a crew of 50 Lascar firemen and sailors (stewards and cooks are excluded because their diet is quite different) were shipped in Bombay and a supply of Indian "cured" rice was purchased for their use. At the end of July the last bag of this particular rice was expended, and as the ship was now working on her station in the Red Sea a supply of Rangoon "uncured" rice was picked up at Aden and replenished later at Suez. This rice began to be consumed during the last week in July and was the staple article of diet until early in November when a virulent outbreak of beri-beri occurred. The diagnosis was first made by the ship's surgeon, but was definitely confirmed by officers of the Indian Medical Service stationed at Aden, where a number of the men were landed in hospital. Altogether there were 20 well-marked cases, of whom three died, and as the others were probably infected, the whole crew were shipped backed to Bombay and a fresh one sent to take its place.

About this time I came across Dr. Braddon's book, and being much impressed by it I considered that this epidemic was a vindication of his theory. The men had been perfectly healthy whilst Indian rice was consumed and the outbreak did not commence till Rangoon rice had been in use for three months, which I gather is the usual period. Here effect had seemed so definitely to follow cause that I had no hesitation in advising the Managing Director to immediately stop the supply of "uncured" rice to the ship and to substitute the "cured" variety as a permanent institution. This advice was acted upon at once, and I can now place it on record that with the same class of crew, living under exactly the same conditions, not one single case has occurred since.

The other concrete example, to which I would like to draw attention, deals with the history of two epidemics of beri-beri occurring amongst the Chinese coolies employed in erecting buildings on a small island in the Cocos-Keeling

group for the Eastern Extension Telegraph Company. The first outbreak was in 1902, when I myself was in medical charge. It was very virulent and in spite of all precautions as to sanitation, treatment, moving the site of the coolie lines on two occasions, &c., 48 cases occurred amongst 60 men, and of these 17 died. At that time many conflicting opinions as to the cause of beri-beri were held by the medical authorities in the Straits Settlements, and those whose opinion seemed to carry the greatest weight did not believe in the rice theory. I therefore discounted it, but was able to come to no conclusion that satisfied me. I thought that an early case had been overlooked when the men were inspected in Singapore and that the others had become infected from this, but in view of recent research and with the dates and history of the epidemic before me I am firmly of the opinion that it was due to the consumption of "uncured" rice. Against my idea of an infection was the fact that no single case occurred amongst the cooks and house servants, and as these had less rice and a more generally generous diet, it is really a distinct point in favour of Dr. Braddon's theory.

Following this epidemic the work was rapidly finished by a large new gang and no more was heard of beri-beri on the island till March, 1908, when the same conditions as before were repeated. New buildings were required and a gang of 68 Chinese coolies left Singapore on Jan. 2nd, taking with them the usual Chinese food-supplies, of which the staple was "uncured" rice. The medical man in charge was Mr. A. H. Macdonald, whose work, during a very trying time, was most excellent and from whom we received long and careful reports. The epidemic began with a case on Feb. 18th followed by another on the 29th. Then six cases developed between March 6th and 30th, and during April it became a scourge, no less than 34 further cases being added. On May 1st three more developed, and of this total of 45, 12 died on the island and three others whilst on their way back to Singapore. The whole of the remaining men were taken away from the island on May 2nd and were replaced immediately by a new gang of 29 which arrived on April 28th and whose number was further increased to 45 on July 2nd. This new gang were housed in new huts and all possible precautions taken, but the only real difference in their work, environment, and diet was that the rice-supply, on my strong recommendation, was changed from the "uncured" to the "cured" variety.

The result is both interesting and instructive. Writing under date June 29th, 1908, Mr. Macdonald says: "The new gang has been, and still is, in excellent health, not one having been absent from work a single day through illness," and again, under date Sept. 25th, 1908, he states, "The Chinese workmen have had no sickness amongst them beyond minor surgical troubles." Discussing the probable cause of this immunity from beri-beri, he states that he considers *the strongest factor* is the substitution of "cured" for "uncured" rice, and with this I fully agree. The greater number of this gang of workmen left the island on Oct. 1st, not a single case of beri-beri having occurred amongst them, and I attribute this solely to the fact that a general order has been in force since April, 1908, that no "uncured" rice is to be supplied to the native servants of the company (Chinese or Malay) working on this island.

Reviewing the history of these three epidemics, it seems to me that Dr. Braddon's work marks a great epoch in the study of a disease, the ravages of which must be seen to be believed, and if these details will induce others to put his theories into practice I feel sure they will be gratified with the results.—I am, Sir, yours faithfully,

C. W. CURTIS, M.R.C.S. Eng., &c., D.P.H.,
Principal Medical Officer, Eastern and Associated Telegraph Companies.
Electra House, E.C., June 12th, 1909.

COLOUR VISION IN THE MERCANTILE MARINE.

To the Editor of THE LANCET.

SIR,—The long time it takes to awaken certain official bodies out of the lethargy into which their official position lulls them is notorious, but it is surely time that the Board of Trade undertook to revise the methods they use for the examination of candidates to whom they grant certificates of proficiency in colour vision when these men have thousands of pounds worth of property and hundreds of lives dependent upon their correct appreciation of coloured lights which are constantly appearing during the night at sea, and who likewise have to read signals made with coloured flags during the daytime. The methods still in vogue are "Gilbertian" to a degree and would scarcely be credited by a stranger unacquainted with certain official methods. This state of affairs was prominently brought forward only a few weeks ago.

It appears that a Mr. —— obtained his certificate as second mate 18 months ago, when he was examined for colour vision by a certain captain in the Mercantile Marine appointed by the Board of Trade for this obviously medical duty, and he was duly passed. After serving for another period at sea he presented himself for examination as "mate," when the same examiner tested his sight and rejected him on account of defective colour vision. Not content with this, the candidate applied for a "special examination," in consequence of which the Board referred him to their special examiners, who consisted of another ship's captain assisted by an assistant professor of physics at the Royal College of Science. These examiners, who, of course, had no knowledge of ophthalmology or physiology, confirmed the previous decision and rejected him. He next on his own initiative applied privately to an ophthalmic surgeon, who found his colour vision so good that it in no way impaired his efficiency as an officer at sea. This, of course, was distinctly awkward for the Board of Trade, who had somehow to get over the difficulty, so in their wisdom they appointed a special tribunal to decide between the doctor and the lay examiners. One would have expected that this tribunal would have been composed of specialists in eyesight, or at any rate of people who knew something of the subject in order to weigh the conflicting evidence. Although such a course would be natural, yet it is not the way of the Board of Trade, who have ideas of their own on such matters, so they appointed the president of the local Marine Board, a stipendiary magistrate, a Member of Parliament, and one or two ship's captains.

Considering that not a single member of this committee had any more knowledge of physiology and sight-testing than had the original examiners, it is obvious that any opinion they might express as to who was right and who was wrong would not be worth the paper on which it was recorded, and an equally satisfactory result would have been arrived at by the simple expedient of tossing a coin and seeing whether it came down heads or tails. Still one must give credit where it is due, and this tribunal not unnaturally came to the conclusion that the doctor was more likely to be right on a medical point than superannuated captains, and so they decided that the candidate had good colour vision, and that his certificate should be granted. Would anyone believe that in the present day such a farce would be gravely carried through by a responsible Government department, and yet this is absolutely what happened about four weeks ago.

In this letter it would be impossible to go into the details of this ridiculous affair, but suffice to say that the important lantern test was used by no one. Holmgren's wools were, of course, used, and everyone knows how utterly impossible it is to detect all cases of colour-blindness with them. Brilliant spectral lights were employed for an abnormal length of time, and this no doubt produced fatigue, and after-images which would render anyone incapable of correctly naming the colours seen, and as these are pure colours and not impure ones (as is always the case with signal lanterns) so we find those with defective colour sense far more confused by the impure colours than by the pure ones, and thus it is that an examination with spectral lights is by no means a good test to rely on in a routine examination. Colour fatigue is far more readily produced in those whose colour vision is below the normal, but there are scores of people who although not possessing the most highly developed colour sense yet would never mistake a colour used in a signal lantern, and it would be as unfair to reject these as it would be to call a person deaf whose ear was incapable of distinguishing quarter tones in music.

These unhappy candidates are at the present time at the mercy of a board who seem incapable of grasping the fact that an examiner should have some knowledge of the subject on which he is asked to adjudicate. Surely there are plenty of ophthalmologists in the land, and if there are, why cannot

some of them be appointed to examine eyesight? We shall next hear of mining engineers examining candidates in navigation, or sanitary inspectors granting certificates for proficiency in marine engineering. The way in which this particular candidate was tested clearly shows that they were attempting to use some of the methods so long advocated by Dr. Edridge-Green, but that having no knowledge of the subject they utterly failed to grasp his points, and thus we find a man who, but for his perseverance, would have had his livelihood taken away from him, just because of some antiquated regulations to which the Board of Trade still adhere. It is to be hoped that before long this crying injustice both to the candidates and to the general public will be swept away, and that common sense will at last prevail. It is surely no great thing to ask that the Board of Trade shall appoint as their examiners men who know something about their subject.

I am, Sir, yours faithfully,

Harley-street, W., June 7th, 1909. C. DEVEREUX MARSHALL.

A CASE OF SEVERE VERTIGO AND TINNITUS; DESTRUCTION OF THE LABYRINTH; CURE.

To the Editor of THE LANCET.

SIR,—Under the above heading I published in THE LANCET of Sept. 19th, 1908, p. 871, a case which that title sufficiently describes. As a year has now elapsed since the operation, it may be of interest to your readers to know the further history of the case. I wish also to correct a slight error in the early history of the patient. It is stated in the account given that he had been "free from discharge for over 18 years"; as a matter of fact, the discharge occurred in infancy and ceased before the age of eight years, the patient being 48 years and 6 months old at the time of the operation.

I last saw the patient on May 28th of this year—the first anniversary of his operation. The wound cavity in the left temporal bone was soundly healed and completely epithelialised, the scar of the incision being scarcely visible. The hearing was *nil*. The patient expressed himself as feeling "better than he had been for years." He has had no tinnitus and no vertigo whatever since his operation, and is able to carry out his duties as a country clergyman without the least trouble; he is, of course, greatly helped by his proficiency in lip-reading. The condition of his vestibular apparatus was investigated for me very kindly by Dr. Dan McKenzie, the result of his examination being as follows: "Slight nystagmus both, slightly more marked left. Caloric cold, L., spontaneous nystagmus unchanged in 120 secs. No vertigo. Caloric cold, R., (?) increase of spontaneous nystagmus in 90 secs. No vertigo."

Nine days before his operation the hearing in the right ear was: voice, whisper, acoumeter, Galton whistle, bone conduction (to C128), *nil*. By air conduction he showed perception for C^2, C^3, and C^4. He perceived the continuous tone series a^2 to a^3, but missed C_4 sharp. After the operation, the hearing in the right ear improved very slightly, being on June 29th, 1908: voice 3 inches; Galton whistle, 11048·30 D.V.; bone conduction (C123), 0. By air he showed: 1C64 perception (?), C perception, C^1–27", C^2–38", C^4–19", C^4–35", but this increase is now slightly diminished.

I am, Sir, yours faithfully,

MACLEOD YEARSLEY, F.R.C.S. Eng.

Harley-street, W., June 15th, 1909.

THE NEW IRISH UNIVERSITIES.

To the Editor of THE LANCET.

SIR,—In a fortnight the statutes of the new Irish Universities will have passed into law, so that any modifications must be made by Parliament at once. Convocation of the Royal University—largely composed of medical men—has not been consulted about these statutes, and therefore they need amendment. The Convocation recommended the establishment of a degree of B.Sc. in Public Health. This has been done in Dublin but not in Belfast, but instead of being open to graduates of all universities on the Medical Register is confined, apparently, to those who have taken the M.B. in the University at Dublin. It is also complained that an effort is being made to shear Convocation of any real strength by confining the power to call meetings of it to the Chancellor or Senate in Dublin, whilst in Belfast a number of members can call a meeting of Convocation. Power to elect a clerk of Convocation has hitherto lain with that body. Now it is transferred to the Senate.

Hitherto Convocation of the Royal University elected a certain proportion—usually of medical men—to the Senate. This power is now taken from them for five years. There is also a strong objection to persons who have been nominated members of the Senate of the new universities being elected to paid professorships or other posts of emolument. If such are elected they should resign from the Senate forthwith. The institution of a degree of D.Sc. in veterinary medicine is desirable; there is a strong Veterinary College in Dublin, but no provision for the study of diseases transmissible from animals to men. Such post-graduate study would be the result of the possibility of obtaining a higher qualification for a veterinary surgeon. In like manner a much-needed stimulus to the study of pharmacology would result from the granting of a B.Sc. degree in pharmacology for registered pharmacists. I am, Sir, yours faithfully,

J. C. MCWALTER, M.A. R.U.I.,

Dublin, June 13th, 1909. M.D. Brux., F.F.P.S. Glasg.

PS.—Unless power is given to the statutes to confer these new degrees Convocation will be unable to do so afterwards.

CEREBRAL HÆMORRHAGE AND HYPERPYREXIA.

To the Editor of THE LANCET.

SIR,—In THE LANCET of June 12th, p. 1716, you published a letter from Dr. Morgan Richards relating to a case of cerebral hæmorrhage followed by hyperpyrexia and death, which occurred on board the Pacific Company's R.M.S. *Oropesa*. By a strange coincidence I had a similar experience, curiously enough on the same boat and in practically the same part of the Atlantic. A passenger, aged 35 years, who previously to his death looked to all intents and purposes a healthy man, was one morning "seized with a fit" when about three days' journey from St. Vincent. The heat had been very trying and when I saw him he was in the usual condition seen in cerebral hæmorrhage, cyanosis, stertor, coma, &c. When examining him I was struck with the extraordinary heat given out by the body, and on taking the temperature in the axilla I found it 110° F.; in fact, the mercury had gone right up to the end of the thermometer. On procuring another instrument graduated to 115° I found the temperature in the axilla was 111° and in the rectum 111·5°. The patient died four hours after the seizure. Hyperpyrexia before death is quite a common accompaniment of cases of cerebral hæmorrhages and in injuries to the head, and in reply to your correspondent, Mr. V. P. Norman, this phenomenon seems to me to be a clinical fact quite often recorded. I am, Sir, yours faithfully,

B. H. PALMER, M.B., B.C. Cantab.

Victoria Hospital, Folkestone, June 14th, 1909.

BLOOD EXAMINATION IN SUSPECTED APPENDICITIS.

To the Editor of THE LANCET.

SIR,—In the interesting case of appendicitis reported by Dr. J. S. Boden and Mr. E. M. Corner in THE LANCET of June 12th, p. 1682, it seems to me that had a blood count been made on the same day (Jan. 28th) as the blood specimen showed a negative typhoid reaction a diagnosis of suppuration could have been made. On the 26th the blood count would probably have indicated the presence of pus, and I am inclined to think that a leucocytosis would have been found on the 23rd or possibly even on the 22nd. It is evident that very little would have turned the balance in favour of early operation, and an increased white cell count, so rarely found in typhoid fever, would have been sufficient. One has not to wait for a large abscess before getting the blood change—a single drop of pus is sufficient, as was found in a case I operated on lately where the white cells numbered 35,000 per cubic millimetre and where the ovaries and tubes were much swollen and adherent, and a single drop of pus was

found in the appendix. Sufficient attention has not been drawn to the necessity for counting the blood cells in all cases where suppuration is a possibility.

I am, Sir, yours faithfully,

June 14th, 1909. SKENE KEITH.

LENHARTZ'S TREATMENT OF GASTRIC ULCER.

To the Editor of THE LANCET.

SIR,—In the account given by Professor Lenhartz of his treatment of gastric ulcer in your report of the German Congress of Internal Medicine in THE LANCET of June 12th, p. 1716, he says that 40, and subsequently 50, grammes of raw meat are given per day. A little later he says that the patient is not discharged from hospital until no blood has been present in the fæces for several weeks. It is important and would be interesting to know what diet Professor Lenhartz keeps his patient on for the few days previous to the examination of the fæces, and how often this is done.

I am, Sir, yours faithfully,

College Gardens, Belfast, June 14th, 1909. W. CALWELL.

*** Our correspondent will find the treatment of Professor Lenhartz set out at length with a diet table in an article by Dr. J. Victor Haberman which was published in THE LANCET of July 7th, 1906, p. 25. But the examination of the fæces is not mentioned.—ED. L.

THE SEMON TESTIMONIAL.

To the Editor of THE LANCET.

SIR,—Sir Felix Semon, physician-extraordinary to the King, is retiring from practice, and the occasion will be marked by a complimentary banquet to be given him by his professional and other friends on Friday, July 2nd, at the Whitehall Rooms, Hotel Métropole. The organisers of the banquet are anxious to found a lectureship or scholarship in his name to be a record of his scientific work as one of the founders of the British School of Laryngology. Mr. Henry T. Butlin will preside at the dinner, and all communications with regard to the Testimonial Fund or application for seats at the banquet should be addressed to one of us, the honorary secretaries.

We are, Sir, yours faithfully,

ALFRED MOND, M.P.,
35, Lowndes-square, S.W.;
P. WATSON WILLIAMS, M.D. Lond.,
4, Clifton-park, Bristol;
H. J. DAVIS,
8, Portman-street, London, W.

THE GERMAN CONGRESS OF INTERNAL MEDICINE.

(FROM OUR BERLIN CORRESPONDENT.)

(*Concluded from p.* 1718.)

The Treatment of Chronic Bronchitis and Bronchial Asthma by X Rays.

Dr. SCHILLING (Nuremberg) reported that he had obtained excellent results by the use of x rays in chronic bronchitis and bronchial asthma. The discharge became less abundant and the asthmatic trouble became better or even disappeared. In some instances the asthmatic attacks were definitely stopped by a single application of the rays. The results were especially striking in children. In 70 per cent. of the cases complete recovery, or at least great improvement, took place. The improvement continued in a great number of cases for months and even for years.

Neurasthenia after Lead-poisoning.

Dr. OTTO NAEGELI-NAEF (Zürich) reported an epidemic manifestation of neurasthenia in workmen suffering from lead-poisoning. The objective symptoms of poisoning were very slight, but characteristic symptoms of neurasthenia were present, having the appearance of a traumatic neurosis.

Researches on Metabolism in Febrile Diseases and Convalescence.

Dr. ROLLY (Leipsic), after alluding to some observations formerly made by him on metabolism in patients suffering from enteric fever, reported a new series of researches in infectious diseases carried out in conjunction with Dr. Meltzer. The cases included 7 of septicæmia, 4 of angina, 1 of catarrhal pneumonia, 1 of rheumatic arthritis, 1 of erysipelas, and 2 of tuberculosis. The results were very like those obtained in enteric fever, in the feverish stage as well as in convalescence. He further found in two patients suffering from anæmia and gastric ulcer and in a patient suffering from pernicious anæmia that in these cases a chemical substance containing much oxygen was retained in the organism. He concluded that in morbid conditions leading to inanition, whatever the cause might be, the albumin of the body was oxidised in an abnormal way, so that the nitrogenous part was at once consumed, whilst the component consisting partly of carbon was retained in the body for a long time. This carbon-containing compound was eliminated through the lungs during convalescence whilst the nitrogen was again assimilated.

The Metabolism of the Inorganic Constituents of the Tissues in Relation to Pathology.

Professor MAGNUS-LEVY (Berlin) said that the theory o ionisation made it possible to understand how substances of inorganic origin might enter into chemical combination with organic compounds. This process, in which inorganic substances acquired properties not possessed by them when in the free state, was, in fact, rather frequent. The mineral substances which were necessary for the organism were contained in the food, and when they were not already in a state of organic combination the body was able to convert them into organic compounds. A classic example was the inorganic iron which entered into the composition of hæmoglobin. According to the opinion of Professor Bunge the administration of iron was useless for the formation of hæmoglobin, but clinical experience has, nevertheless, shown that this opinion was erroneous, and by experiments in animals it had been proved that ferrates, and even metallic iron, in a state of fine division, were assimilated by the organism. With respect to calcium the speaker pointed out that the rachitis of children was not exclusively caused by a deficiency of calcium salts in the food; it had been shown by experiments on young animals that the administration of food containing no calcium salts produced a morbid condition clinically similar to rachitis, but that the microscope revealed the existence of histological differences. The deficiency of lime in the food might, however, produce a liability to rachitis. In chronic exhausting diseases such as leukæmia and diabetes there was weakness of the bones together with an abundant excretion of phosphates. Professor Magnus-Levy made only a short allusion to compounds containing iodine because that question had been discussed in this Congress two years ago, and he then took up the subject of chloride of sodium. He said that a daily quantity varying from 15 to 20 grammes of this substance was harmless for healthy persons because it was discharged by the urine within 24 hours, but when the kidneys were in a morbid condition they were unable to eliminate that amount and a retention of salt consequently occurred. This retention was frequently the cause of œdema. A reference was made to Professor Widal's observation that the œdema from which a patient was suffering disappeared as soon as no chloride of sodium was given with the food, but re-appeared on the administration of ten grammes of the salt. A strict milk diet was not advantageous in these conditions, because three litres of milk contained five grammes of common salt, but a mixed food, consisting of bread, potatoes, rice, butter, and some meat, contained only from one to two grammes of salt, provided that no salt was added in cooking the food. Under the *régime achloruré* of Professor Widal excellent results had been obtained in cases of Bright's disease attended with œdema. The retention of phosphates did not produce œdema. Œdema in diseases of the heart and liver depended on other causes and were therefore not so decidedly influenced by the food, but nevertheless some good results were obtained by similar treatment. Retention of chloride of sodium occurred in arterio-sclerosis, gout, emphysema, and in all acute infectious diseases; a reduction of the amount of common salt in the food might therefore be useful in these conditions. In the treatment of epilepsy, if food containing little chloride of sodium was given, this had the effect that an alkaline bromide administered therapeutically was

retained in the system, so that its specific action on the disease was of longer duration. In infants morbid conditions were frequently produced by a too liberal use of common salt.

Therapeutic "Dechloruration."

Professor WIDAL (Paris) gave an historical review of the observers who have contributed to the modern theory of the action of chloride of sodium in Bright's disease. He said that some authorities had held the opinion that this was not the only substance which was of importance for the development of œdema. Professor Widal, however, together with Dr. Faval, maintained that chloride of sodium alone was the cause of this symptom; they succeeded in producing œdema in Bright's disease by administering a certain quantity of salt in the food. He further stated that milk was too rich in salt for such patients, and that a mixed diet as above mentioned by Professor Magnus-Levy in his address contained a smaller proportion of salt and was therefore more suitable. Œdema occurred in two stages, first in the form of deep infiltration, which was not visible, and, secondly, as visible œdema of the skin and subcutaneous tissue. Deep infiltration could only be ascertained by regularly weighing the patient. The method of dechloruration devised by Professor Widal had two objects—namely: (1) to remove the salt contained in the organism and so to combat the œdema; and (2) to ascertain the amount of salt which could be discharged by the diseased kidney. It must be remembered that the permeability of the kidneys for salt was different in different individuals and in different stages of the disease. By observing the patient's weight and the relative quantities of salt ingested and excreted it was possible to ascertain the amount which was suitable for the organism. In certain patients dietetic treatment alone had not the desired effect and diuretic medicines must be administered. When the œdema had disappeared, and the weight of the patient had been constant for several days, the quantity of salt might be very cautiously increased. Many patients did very well under dechloruration; for others the method was no longer suitable after a certain time. The speaker distinguished two forms of Bright's disease—one with a retention of nitrogen, and the other with retention of chloride of sodium; the urea was retained in the blood, whilst the chloride of sodium made its way from the blood into the tissues of the body. Therefore the retention of salt often leads to hydropic uræmia, the retention of urea to dry uræmia. In patients suffering from retention of salt the urea might be present within the blood only in a minimal quantity of 0·2–0·5 gramme for every litre, but when the blood contained up to 4 grammes of urea a retention of urea was present. Certain patients with vomiting and symptoms of apparent eclampsia and œdema might improve very soon, whilst others showing only a slight sleepiness or anorexia might suddenly fall into deep coma. In these cases the prognosis might be ascertained by the quantitative estimation of urea; notwithstanding severe symptoms good results were obtained by dechloruration when the quantity of urea was normal, which meant that only a retention of chloride of sodium was present. Patients with Bright's disease, even without insufficiency of the kidney, should take as little salt as possible, because it was impossible to state at what moment an abundant administration of salt might become harmful.

Professor STRAUSS (Berlin) spoke against dechloruration in Bright's disease with a good compensation of the kidneys. In œdema issuing from heart disease only in very severe cases a result may be obtained with dechloruration.

Dr. BICKEL (Berlin) discussed the influence of mineral substances on the glands of the stomach. He said that the same mineral substance might have a different action on the healthy or morbid viscera. Some of them produced an increase of secretion within the stomach, but a decrease in the intestines.

Dr. KLUM (Strasburg) said that the administration of a great quantity of bicarbonate of soda produced œdema by the retention of water, especially in diabetic patients. He mentioned the case of a diabetic man whose weight increased within six days by 9 kilogrammes after an administration of 190 grammes of bicarbonate of soda. Hitherto this compound was used as a diuretic. Probably in diabetes with acidosis the tissues retained the compound because of the deficiency of salt; the same was the case in healthy people when a diet poor in salt was given.

The Relation Between Internal Secretion and Salt Metabolism.

Dr. FALTA (Vienna) said that a relation existed between the thyroid gland, the pancreas, the hypophysis, the chromaffin system and the metabolism of albumin, carbohydrates, and fat. There were two groups of glands: the first, to which the thyroid and the hypophysis belong, acted on the sympathetic nerves, and was therefore termed the sympathetic group; it increased the metabolism. The second, termed autonomic group, had a hindering influence on the metabolism, especially of albuminates and fat. The same antagonism between the two groups was obvious also in the metabolism of salts; the sympathetic glands increase, the autonomous decrease it. In animals the removal of these glands produced an enormous increase of the discharge of salts by the kidneys. Eosinophilia and galvanic irritability were also influenced by both groups of glands in an antagonistic sense.

The Action of Intravenous Injections of Hypertonic Salt Solutions.

Dr. VAN DEN VELDEN (Elberfeld) said that injections of a few cubic centimetres of a 5 to 10 per cent. salt solution had a hæmostatic action. He had never seen any ill effect arise from these injections, neither fever nor albuminuria nor glycosuria, but only a slight increase of leucocytes. The number of, or the form of, erythrocytes was not altered; a slight hyperæmic plethora and a better filling of the vessels were observed.

In the discussion Professor MOHR (Halle) said that he had tried to produce œdema by the administration of water to animals from which salt had been withheld and which had previously been made artificially nephritic. The experiment was successful in four dogs. He concluded that in the treatment of hydropic patients not only the dechloruration but also the quantity of water was of importance. Dechloruration was not harmless, as suggested by Professor Magnus-Levy and Professor Widal. Two dogs suddenly died on a diet poor in salt but abundant in potassium salts, the post-mortem examination being negative. The question whether chloride of sodium is prejudicial must be answered in an affirmative sense. In infectious diseases Bright's disease might be avoided by administering a diet with little salt. Professor Mohr had prescribed in 12 cases of scarlet fever the usual milk diet, and in another series of 10 cases meat without salt after Widal's theory. The result was that of the first series six cases and of the second series two cases contracted Bright's disease.

Dr. GERHARD (Jena) drew attention to the sudden alterations of the excretion of chloride of sodium occurring in acute Bright's disease; he saw the discharge of salt stop for one to two days whilst the albuminuria and the discharge of casts continued for weeks. When a retention of water happened in diabetic acidosis after the administration of a large dose of chloride of sodium, a characteristic œdema of the face was often present.

Dr. SCHOTT (Nauheim) said that it was important for the therapeutic effect of dechloruration that the patient should make active movements. The state of the patient sometimes underwent remarkable alteration during dechloruration; whilst the diet was quite suitable to them for a certain time, they might suddenly show anorexia, enormous œdema, and syncope, and these undesirable symptoms might even disappear after the administration of a food with an abundant amount of common salt.

Professor MAGNUS-LEVY, answering the above objections, said that an increase of weight was often observed in diabetic patients after the administration of bicarbonate of soda; it was caused by the restitution of the normal amount of water in these "exsiccated" patients. The opinion that dechloruration was prejudicial for the healthy kidney was not yet securely founded. Concerning the sudden death of Professor Mohr's dogs, he pointed out that such deaths of animals frequently occurred in laboratories without an apparent reason. The cases mentioned by Professor Schott were very interesting, but further analysis of these cases was necessary. Dechloruration as a prophylactic against Bright's disease was not quite reliable.

The Use and Interpretation of Electro-cardiograms.

Professor HERING (Prague) said that he had caused in

animals by injections of dioxalic acid an "alternating" action of the heart and showed electro-cardiographic curves taken before and after the production of the alternating effect; the heart was shown to beat in an inverse sense, the contraction of the ventricles preceding that of the auricles. It was remarkable that the heart of frogs which had only one ventricle showed the same electro-cardiogram as the heart of mammals, including the human species.

Dr. HOFFMANN (Düsseldorf) said that the electro-cardiographic method might give misleading results from a variety of causes, such as displacement of the heart by pleuritic exudations, gastric flatulence, &c. According to his opinion the electro-cardiographic method does not explain the contractions but the irritability of the heart; it cannot be used for clinical purposes without a solid physiological and pathological basis, which hitherto does not yet exist.

Dr. STRUBELL (Dresden) showed a great many electro-cardiograms of healthy individuals, athletes, and aged persons. He said that tremor of the fingers was one of the principal causes of failures of the method. The curve disappears with the deterioration of the cardiac action. With the use of the electrographic method a new era had commenced in the diagnosis of heart diseases, especially of arrhythmia.

THE CLEANSING OF CAIRO.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

(Concluded from p. 1723.)

FILTHY FUEL FOR PUBLIC BATHS.—VAST ACCUMULATIONS OF GARBAGE AND SCAVENGER CATS IN POPULOUS CENTRES.—BUILDING ON DOMESTIC REFUSE.—STREET CLEANING AND UNRULY EUROPEANS.—FLOODS ON FOUL SOIL.—CONCLUSION.

OF the 600 cartloads of rubbish collected in a day, the baths, as already stated, purchase 189 loads. This would be an excellent thing if the rubbish was at once placed in the furnaces that warm the water for the baths and consumed. But under the pretext that if it rained the refuse would not be dry enough to burn the managers of the baths are allowed to store a sufficient supply for at least a fortnight. In reality, they often take in enough to last several months, and such a vast accumulation of very foul refuse creates a great nuisance. It must also be borne in mind that the baths are not in outlying parts but, on the contrary, are distributed all over the city and are more especially to be found in the districts where the population is most dense. My first visit was to the largest and best hammam in Cairo. A narrow street conducted me to the back of the premises and there I had to descend into sombre and sinister regions, stepping on all kinds of indescribable things, slimy and slippery or hard and gritty by turns. And sometimes a twining thing, a piece of wire or the hoop of a broken barrel, would get between my feet or grasp my ankles and threaten to trip me up. We passed by narrow winding passages. There might have been stairs but they could not be seen or felt, for the space between the steps was choked up with the dirt and refuse that had been dropped and trodden into them so that the stairways were converted into inclined planes. Ascending I reached the roofless floor of a ruined house. There seemed to be two or three dilapidated houses just behind the baths and their roofless rooms were filled many feet deep with all the refuse brought up from the scavengers' carts. Dust-besmirched, wretched men groped their way about carrying bags full of this rubbish from the scavengers' carts to these store-rooms or from the store-rooms to the furnace below. There were likewise many loiterers and it was difficult to conceive what they could find to do or what attraction such a place could present. Perhaps some were friends of those who really had work to do and were present as sympathetic spectators, but I mention their presence to show that all idlers who chose were admitted, and there was a still larger number of domestic animals present. A weird-looking goat peered at me from one corner, then there were several sheep and lambs, but more numerous than all were the cats. There must have been more than a hundred scavenger cats present. Cats are never molested in Egypt and these animals took no trouble to get out of the way; it was necessary to be careful so as not to tread on them. When they are tired of picking out food from among the garbage they go and lie down on one of the domed roofs and enjoy the warmth coming up from the baths which these roofs cover. Here the cats sleep till they are hungry again. Thus there are animals in numbers sufficient to make the place dangerously filthy, even if the household refuse and garbage brought in was quite clean in itself. Nor must it be thought that the scavengers especially select a cleaner sort of refuse to bring to the baths. On the contrary, it is simply household waste, green leaves, faded flowers, the peeling of vegetables, the offal of poultry or rabbits, broken pots and pans, rags and tatters, every sort of useless rubbish containing much moist and organic matter, all ready to ferment and add to the foulness of the surroundings.

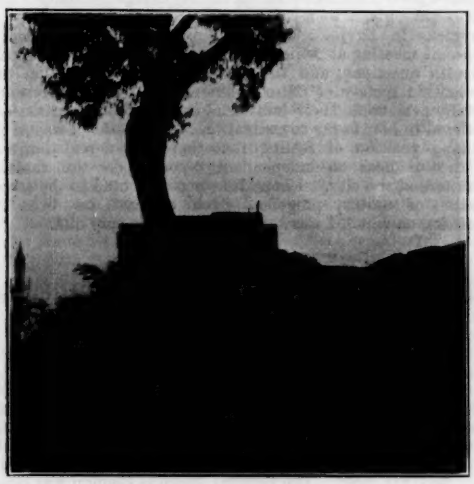
In the domed roofs of the baths there are ventilators. From below there came puffs of steam through these apertures and the voices of the women and children bathing also ascended. Doubtless they thought they were cleaning themselves, but there were heaps of foul refuse piled up on much higher levels than the ventilators, and from these the dust descended through the apertures on to the bathers' naked skin just when the pores were open under the heat of the bath, and commendable as the practice of frequent ablution may be I felt that in Cairo it must have its risks. This particular hammam takes 186 cartloads of rubbish per month, and the stench and the flies engendered in this vast quantity of garbage and other refuse are appalling. Yet the hammam is in the very heart of the city and within a stone's throw of the headquarters of the army of occupation. From amid all this dirt I was able to look up at these headquarters and see British soldiers leaning out of the windows ready to breathe the dust the wind might bring them from the abominable accumulation of filth on which I stood. On leaving this hammam I went to several other similar but smaller establishments. The conditions were much the same. Evil-smelling refuse piled up in courts, dilapidated houses and roofs situated at the back of the baths and peopled by innumerable cats, together with some bigger animals, such as sheep, goats, and occasionally by geese. In one case there was a bakery with the rubbish on one side and a rag merchant's depôt and sorting place on the other side. Thus, from whichever side the wind might blow it would convey dust from a foul source on to both the moist dough and the baked loaves. The baker worked quite unconcernedly and evidently had no idea that his bread might easily be contaminated. Naturally no food should be exposed near places where refuse is stored and handled. As the scavengers' carts are emptied by hand into bags and their contents carried in small quantities at a time there is a great scattering of the dust, and this should not be allowed in narrow streets and thickly populated districts, particularly when food is exposed for sale close at hand.

The utilisation of household refuse for fuel thus gives rise to a serious and dangerous nuisance, and this in all parts of the town, since there were no less than 49 bath furnaces alight when I inquired into the matter, and there remained ten other bathing establishments that might also be utilised at any moment. On the other hand, if some portion of the refuse was not consumed by the bath furnaces then the difficulty caused by the accumulation of this rubbish just outside the city would be aggravated. Further, these furnaces not only warm the water for the baths but cook the beans in oil which constitute one of the staple articles of food for the people. These are brought in large earthenware jars and baked in the furnace. For cooking at home the only cheap fuel available are cakes of dried dung which make an evil-smelling smouldering fire. Obviously, therefore, one of the first necessities is some form of clean and cheap combustible material, such as, for instance, oil if no coal can be found near at hand. All foul rubbish could then be treated as manure and not employed as fuel save in some manner which is not antagonistic to public health.

There is also in Cairo a great danger that the dumping ground may be converted into sites for building purposes. On the other side of the Nile close to a main road passing near the Dookhi village there was a depression in the land and in this hollow water accumulated. Thus during several months of the year there was a pond of dirty stagnant water. Undoubtedly it would have been a good thing to fill up this hollow and level the ground, but of course this should be done with good clean wholesome earth or sand. The hollow

has been used as a dumping-ground for household refuse. Here the scavengers have brought thousands of cart-loads of all the rubbish they could collect. The hollow to the depth of six feet is now filled, the refuse flattened out and already children from the village play upon it as if it were a field, while herds of goats go there to see if they can scratch up and disinter some eatable garbage. This newly created field of filth is at the angle formed by the main road and a by-road leading to the village. Here at this angle two shanties have already been constructed and both for the sale of food. The shanty to the right of the illustration (Fig. 4) is a native restaurant.

FIG. 4.



Shanty on the edge of the dumping ground, which was lately a pond. Note the proximity of a good dwelling house and the garbage heaped on the roof.

illustration. When I asked why this was done I was informed that the object was to make the roof thicker and therefore the inside of the hut would be cooler in summer. That this thickening consisted of fermentable garbage did not trouble the minds of anyone concerned. To make the matter worse, the little hut immediately opposite is a small butcher's shop, and here meat is hung up to receive the flies and the dust from the vast area which has been converted into a scavengers' dust depôt. Doubtless the village, which was separated from the main road by the hollow, will now extend and houses will be built over the field of rubbish. The administration of the City of Cairo is not responsible for this abominable and dangerous proceeding, as the left bank of the Nile is within the Province of Gizeh.

The same evils, however, are likely to arise on the Cairo side. Indeed, I was informed that the Finance Department of the Egyptian Government had recently proposed to sell for building purposes some of the land that had been used for dumping the scavengers' refuse. The Road Sweeping Department, I understand, ventured to protest that such land was not fit for habitation. Thereupon the Finance Department replied, implying that it was an impertinence for street sweepers to interfere with State finance! Also, I heard that it had been decided to allow some enterprising individual to build working men's dwellings on the great dust depôts if he would first remove four metres deep of the rubbish. But where could he take this rubbish when removed? Obviously it is necessary to study and to bring forward some great scheme for the redemption and cultivation of absolutely arid lands by placing upon them all the rubbish accumulated in the past and to be collected in the future. The scavenger carts should be emptied into railway trucks and everything taken some 10 to 20 miles away from Cairo.

In regard to collecting the refuse and to sweeping and keeping the streets of Cairo clean, the work is well organised and supervised; but, as already explained, not always effective because the service is undermanned. As might be expected, the Europeans are far and away the most untidy and the most difficult to deal with. No rule can be imposed on them. They will throw their refuse into the streets just after the latter have been cleaned. The scavenging department has erected large metallic receptacles in convenient places and calls upon the populations to put their

FIG. 5.

A low-lying street in Cairo flooded after a severe rain, owing to absence of sewers and drains.

Outside, under the rough verandah, soup and sausages and other cooked viands are exposed for sale. As if fearing there would not be enough flies or sufficient dirt settling on this food and coming from the neighbouring field made of refuse, some of the rubbish which the scavengers brought has been piled up on the roof of the shanty, as shown by the

rubbish inside these bins and not to throw it on the pavement or in the gutter. The natives have shown considerable readiness to avail themselves of such conveniences, but many of the Europeans defy the authorities and refuse to give themselves any trouble. The Copts—that is to say, the few native Egyptians who are Christians—imitate the

latter and are nearly as dirty, untidy, and difficult to keep in order as the Europeans themselves. They also display no regard for the injunctions issued and requests made by the scavenging department, but throw any garbage or offal into the street without hesitation.

There is a great difficulty in dealing with all such minor offences. The native police hesitate to embroil themselves in proceedings against foreigners. If a European is justly prosecuted he will probably be condemned, but the native officer will do his best to avoid making an investigation and he does not clearly understand the European laws on evidence. Then the native police have no right of entry where Europeans dwell. Thus, for instance, if an Italian living in a second-floor flat throws filth into the street or shakes his carpet from the window at the wrong hour, the native police may persuade the Italian consul to consent to a reprimand being made. The sanitary authority could then enter the second floor flat if accompanied by the Italian consul. But the house may belong to a Greek, and then the sanitary authority cannot enter and pass through the lower part of the house so as to reach the second floor unless the Greek consul also gives his consent, and it is not likely that two consuls would hold the same opinion as to the importance of the offence committed. In such circumstances it is not surprising that many minor offences are passed over unnoticed if the culprit is a European protected by the Capitulations. But if there are many Europeans who are lax in the fulfilment of their duties of citizenship and are too careless to observe the rules and regulations drawn up for the common benefit of the entire community, they are quick enough to complain when anything happens that is personally inconvenient. Thus when it rains, and this may occur perhaps three times in the course of a year, the European will make a terrible fuss if there is a small puddle of water before his house. His virulent complaints will draw members of the over-worked staff away from quarters of the town where it is not a question of puddles but of regular floods that keep people prisoners in their houses.

This question of the floods is a very serious matter which fortunately will be solved by the drainage scheme. These floods occur in certain low-lying streets because there are no drains. Their extent is shown by the accompanying illustration (Fig. 5). The rain-water accumulates in these streets and there is no gradient for it to flow away. If left to itself the water would remain there until it had soaked into the ground or evaporated. Now powerful engines are sent and the water is pumped up into tank-carts and taken away. But before this can be done the water has mixed with such a filthy soil and surroundings that it gives off the foulest odours. The scavengers engaged in the work often turn sick, vomit, and lose the use of their voices for a few days. They are such sturdy men, however, that they are none the worse in the long run; at least, this was the statement made at the scavenging department. But however this may be, the fact that the men are sick confirms what I said, when dealing with the drainage scheme, as to the contaminated character of the soil on which Cairo stands. It shows also how much cleaning will be necessary before Cairo can become a salubrious city.

Not only will sewers have to be laid, but there are large districts covered by the vilest slum property that must be pulled down and rebuilt. Nowhere is the problem of the housing of the poor more acute than at Cairo. In regard to the drainage question I have shown that there is fair hope that this problem will be solved satisfactorily. Nor should there be any unsurmountable difficulty in obtaining an unlimited supply of efficiently filtered Nile water. The scavenging department is admirably organised; it only needs more money and more men. But when they have collected the refuse they have no efficient means to ensure its sterilisation. Some people imagine that it will be naturally disinfected by the action of the sun. There can be no more dangerous fallacy. Long before the sun has exercised its purifying action the wind has scattered dust far and wide. Also millions of flies have been bred and they convey from their native dust heap whatever germs it may contain and deposit them on the people or the food over which they crawl and disport themselves. A general scheme for the disposal of refuse will have to be formulated.

The housing problem in Cairo, the prevention of the adulteration and the contamination of food, the lack of power to impose protective measures against such diseases as small-pox, and other very important questions have also to be taken in hand. These are problems for the future, and I should like to have said more about them and also to have recalled in some detail the very excellent work that has been done to nip in the bud outbreaks of cholera and plague. But for the moment, at least, I have written enough about the sanitary problems of Egypt. It only remains for me to express my gratitude to the many persons who have assisted me in my task. At the Ministries of the Interior and of Public Works I found willing and courteous aid. The Khedival Medical Society made me the guest of the evening at its annual banquet. The Association of the European Press organised a special entertainment in my honour. To the European and the native press I am indebted for the very large publicity which they have given to my endeavours to promote the cause of hygiene in Egypt. The Egyptian Institute also held a special meeting at which I delivered an address on public health questions, and the leaders of the intellectual and scientific society of Cairo honoured me by their presence. Many persons in their individual capacity called on me and offered to help in my investigations. Altogether I was in the happy position of feeling that there was a real desire in Cairo to hear an independent report upon the sanitary matters of the city. I hope I have contributed to the stimulation of sanitary progress. Such, at least, has been the mission on which I was sent, as well as my only aim.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

The University of Bristol.

THE various public bodies which are to assist in the government of the University of Bristol are electing their representatives. The Bristol city council has chosen for the court one life member (Alderman Elkins, chairman of the education committee) and ten others, and for the University Council five more. The General Medical Council was lately reminded by its President of two clauses in the Bristol University Bill, one empowering the University to examine for, and grant, Diplomas in Medicine, Surgery, and Midwifery; the other giving the Council of the University the right to elect a representative to be a member of the General Medical Council.

The Association of Alumni.

This association held its first annual meeting on June 9th at University College, Bristol. Professor Lloyd Morgan, the Vice-Chancellor of the University, who was in the chair, outlined the scope of the association, which would aim at bringing old friends together. It would, no doubt, correspond closely to convocation as far as the *personnel* of both is concerned; but the functions of the two would be different and would therefore not overlap. The Chancellor of the University, Mr. H. O. Wills, has kindly consented to be the honorary president, the acting president being Mr. G. Munro Smith, surgeon to the Royal Infirmary. The committee consists of the officers with two representatives from each of the four faculties. There will be an annual subscription of 4*s.*, life membership being conferred on subscribers of two guineas.

A Faculty of Commerce.

An address recently delivered before the Bristol Chamber of Commerce by Professor H. B. Lees Smith, who occupies the chair of economics at the new University, has been reprinted for general circulation. It is a most interesting and cogent plea for the foundation of a chair and a faculty of commerce. Professor Lees Smith, after alluding in general terms to the complexity of commercial enterprise under modern conditions, and the consequent need for special education of those entering upon such a career, gave a sketch of a curriculum which might be adopted by a faculty of commerce. The first year might include the study of a foreign language, economics, commercial geography, and public administration. Second- and third-year students might take up accountancy, commercial correspondence, and the technique of trade and commercial law. Owing to the diversity of commercial careers the curriculum would have to include a number of optional subjects. Under this heading he suggested a second foreign language, one or

more scientific subjects, the history, theory, and organisation of banking, of foreign trade, and of transport, life and marine insurance, and the structure and organisation of some selected industry. The student might go through this course by means of evening lectures, while working in a business house, thus obviating any delay in the opening of his career. As a start Professor Lees Smith asked for a sum sufficient to endow a chair of commerce (which, he explained, would not be occupied by himself), with a salary of £500 or £600 a year.

The Late Dr. Hugh Montgomerie.

On June 2nd there was a large gathering at the West Cornwall Infirmary, Penzance, when the Lord Mayor of London unveiled a tablet, which had been placed over a bed endowed to the memory of the late Dr. Hugh Montgomerie, formerly honorary physician to the institution. The Lord Mayor said that Dr. Montgomerie was a bright example of many members of the medical profession who labour greatly among the poor without fee or reward.

An Action for Libel.

At the Hereford assizes on June 11th, before Mr. Justice Ridley, Dr. Harold Bertie Dickinson sued Mr. Stephen Beeson, a veterinary surgeon, for slander and libel. The evidence showed that acting upon information which had been supplied to him, the defendant accused the plaintiff of failing to notify to the medical officer of health a case of scarlet fever, and in his capacity as town councillor spoke of "this demon's carelessness," "diabolical conduct," also saying that "he ought to be drummed out of the town." The plaintiff stated that he did not notify the case earlier because he was not absolutely certain of his diagnosis. The jury returned a verdict in favour of Dr. Dickinson for £100, being £50 for the slander and £50 for the libel. The judge said that the defendant used very strong language and was undoubtedly in the wrong. Police-court proceedings had previously been taken by the sanitary committee against Dr. Dickinson for failing to notify earlier, and these had ended in his favour.

Longevity.

On June 9th, when the Prince and Princess of Wales were driving from Newquay (Cornwall) to the Royal Cornwall Show, which was being held at St. Columb, Their Royal Highnesses halted at St. Columb Minor to receive the respectful homage of Mr. James Carne, who is now in his 104th year. Mr. Carne enjoys good health and takes a daily walk.—Mrs. Margaret Arthurs of Rowde House, Bath, celebrated the 101st anniversary of her birthday on June 5th. Bath has another centenarian, Mrs. M. Henersley, who celebrated the 103rd anniversary of her birthday last October.

June 15th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Resignation of Professor Bennett May.

Professor Bennett May has resigned his appointment as professor of surgery, and in accepting his resignation the Council of the University expressed its regrets and gave to Professor May its best thanks "for his valuable and distinguished services to the Birmingham Medical School during a period of 33 years." It is quite certain that not only the Council but also his old colleagues and friends regret very much that the time has come when Professor May has felt that he must sever his connexion with the active work of the University. Those of the younger generation who have only been associated with Professor May since the foundation of the University scarcely understand the debt the Medical School owes to him, but his older colleagues, who know how he worked and sacrificed himself and was true to the best traditions of the school in the darker days when its fate wavered in the balance, appreciate to the full the work he did—work which helped so materially to place the school in the comparatively excellent position which it holds to-day.

The New Nursing Home for the General Hospital.

In opening the new nursing home in connexion with the General Hospital, the Lord Mayor of Birmingham congratulated the board of management on the latest addition to the hospital, and said that "no similar institution in the kingdom could claim to be more complete or perfect than the General Hospital." The erection of the new home was necessitated by the continued increase in the numbers of the nursing staff. This has resulted, in great part, from the growth of the number of operations, which has increased from 1496 in 1898 to 3975 last year. The new home, which will cost about £8000, is conveniently situated; it contains 43 bedrooms, a class-room for instruction in cookery for the sick, it is thoroughly well equipped, and it forms a very satisfactory addition to the conveniences of the hospital.

The Hospital Sunday Fund.

At the recent annual meeting of the Hospital Sunday Fund the Lord Mayor was elected President for the coming year. In proposing his election, the Bishop of Birmingham expressed a fear that the uncertainty which prevails with regard to the future of our voluntarily supported medical charities might influence the subscriptions, and he appealed to those who favour the present conditions to do their utmost to sustain them. Dr. Jowett, however, was not satisfied that the problems suggested by the Bishop really had much influence at present upon the bulk of the people who formed the religious congregations, and he considered that if an endeavour were made to enlarge the general interest in hospital work increased support would be obtained. In accepting the appointment of President, the Lord Mayor said that those who believed that our medical relief agencies should be maintained on the present basis had not much to fear, for legislative changes which would throw the burden on the local communities would not be made till large majorities were in favour of the change.

The Bagnall Small-pox Hospital.

Suggestions are being made that the Bagnall Small-pox Hospital should be utilised as a sanatorium or convalescent home. If the change could be made it might result in a considerable saving to the rate-payers, for at present the hospital costs £900 a year for upkeep, and for several years there have been no patients. On the other hand, if the hospital was not available and an epidemic occurred, the North Staffordshire district might be in a deplorable condition. The authorities will no doubt carefully consider all sides of the question before they deprive themselves of what might at any moment prove a vital necessity. And possibly a way may be found to make use of the hospital for some purpose which will not alter its general character and which will not prevent its use for its initial purpose should the necessity arise.

Lymphatism and Chloroform.

At an inquest held recently in Wolverhampton to inquire into the cause of death of a girl who was being operated upon in the Wolverhampton Hospital, it was explained that the patient, who was undergoing an operation upon a deformed foot, was apparently a healthy girl. According to the statement of the house surgeon, the patient began "to come round" before the operation was completed and then suddenly stopped breathing. Artificial respiration was resorted to and breathing recommenced. The operation was then proceeded with, and in a few minutes the breathing again stopped and all attempts to resuscitate the patient failed. At the post-mortem examination an enlarged thymus was discovered. The death was attributed to lymphatism, and the jury found a verdict in accordance with the medical evidence.

The Past and Present Sanitary Condition of Dudley.

In his annual report Dr. J. H. Wilkinson, the medical officer of health of Dudley, makes an interesting comparison between the sanitary condition of the town in 1853–54, when the first report was presented by the late Dr. J. H. Houghton, and the state of affairs which prevails to-day. The death-rate varied from 32 to 36 per 1000; 150 people died from scarlet fever, 65 from cholera, and typhus fever was very prevalent. In certain districts there were about 6000 people with practically no water-supply and the general water-supply was very defective. Last year the general death-rate was 15·28 per 1000; the zymotic death-rate 1; there was no epidemic of zymotic disease, and there were very few houses which were not supplied with water. The contrast displays in a most effective way the improvement of public health which can be obtained by continued work on good lines.

Annual Health Report of King's Norton.

Dr. R. Green's annual report, as medical officer of health,

upon the King's Norton and Northfield urban district shows how rapid the growth of the population has been in a comparatively short period, the total estimated population in 1907 being 75,508, and by the middle of 1908 it had increased to 78,608, whilst the total number of births over deaths was 1081. The immigration which has taken place has no doubt been largely due to the provision of trams and cheap houses, a combination of circumstances which has resulted in the migration of many people from the poorer parts of Birmingham, and which has made Dr. Green anxious to establish in the interest of his district some provision for the practical education of the mothers. He is anxious to keep down the infantile mortality rate, for, as he points out, though the births exceeded the deaths and the number of births was considerably greater in 1908 than in 1907, still the birth-rate (25·54 per 1000) was the lowest recorded, and the death-rate was 10·78 per 1000 as in 1907. Dr. Green notes that the male births greatly exceeded the female births, 1015 to 914, and that 76·1 per cent. of the children were vaccinated, that being 7 per cent. less than in 1907.

June 15th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Post-mortem Examinations in Workhouses.

SOME discussion, animated if not angry, took place at a meeting of the Chorlton guardians held on June 11th respecting a post-mortem examination made a few days before on a patient who had died in the Withington workhouse. The patient died, it is stated, from "pneumonia accelerated by delirium tremens," but after his death one of the medical officers suspected typhoid fever, and his colleague made a post-mortem examination. Before doing so he asked the consent of the patient's widow, "to determine whether typhoid was present or not, as it was a serious matter in a large workhouse." According to the widow and a sister they were told that unless they consented to a post-mortem examination there might be a difficulty in regard to the death certificate, and that the coroner would probably order one to be made. In answer to the coroner as to why he was named, the medical man in question said he did it "accidentally and in the interests of the institution," as he thought it ought to be known definitely whether typhoid fever had been present or not, and, while regretting his action, disclaimed the intention the coroner had suggested of an attempt to frighten the widow. The coroner said that the proceeding was "not merely indiscreet but most improper; the case was one which never would have come before him," and he required an assurance that such a thing would not occur again. It is a serious thing to question any of the dicta of a constitutional authority, but it may be conceived possible that the coroner, usually so judicial, may have been unduly angry at something which the medical man did not intend. It is curious that no mention was made at the inquest of the question of typhoid fever, for in that case to the verdict, "Death from natural causes," the jury would not have added their view that "the doctor should be censured." This might be called a rider to the verdict, to which the coroner seems to have offered no objection. At a meeting of the Chorlton guardians on June 11th the matter led to a long discussion, one or two of the guardians saying that intimidation had been used, that a record ought to be kept of such cases, and that the medical men held this examination in their own interest. Another guardian, a woman, said that far too many post-mortem examinations were made at Withington, and no one benefited by this one but the medical man who made it. "The hospital should not be a practising ground for young doctors." The chairman protested against such charges being made. Another guardian said that they were absolutely without foundation; permission was given prior to the name of the coroner being mentioned but there were objections, and the medical man explained that if the case went to the coroner there would probably be an examination. Anyone who has seen much of workhouse practice will be prepared for some discrepancy in the statements of relatives at different times, but it is a pity to see guardians, presumably of some education, using such wild words of condemnation as were indulged in by some of the members of the board. It is not likely that a medical man, even if young, would undertake something so unpleasant as a post-mortem examination unless he believed that some increase of knowledge might result which would probably benefit his fellow men.

Whisky and Saffron in Measles.

At an inquest held yesterday by the Manchester coroner, Mr. Gibson, on the death of a child from pneumonia during measles, the mother said that when she found the child had measles she gave it saffron and whisky. This is a common proceeding in a certain stratum of the community, and Mr. Gibson told the jury that 99 out of 100 parents gave saffron and whisky and such like things when children had measles. This is a remarkable testimony to the quality of the compulsory education bestowed on the children of the nation for more than 30 years. The coroner expressed the hope that sooner or later people would be educated up to the fact that measles is a particularly fatal disease and that they would pay more attention to their children and call in a medical man when they have this disease. Is this a vain hope, or may we look in the future for more common sense being infused into the education of the coming generation?

Electrical Dangers.

The dangers of our present arrangements for making use of electricity were alluded to quite recently, but may again be illustrated by the occurrence in Manchester of a serious explosion early yesterday morning. Happily it took place about 2.30 A.M., and though sufficiently disastrous, there was no loss of life. A policeman saw a cloud of black smoke coming from the main entrance of the Victoria Arcade. Before he could get there a heavy report took place, followed by a blinding flash and a sheet of flame which was said to be 20 feet high. Simultaneously, the huge revolving iron shutters which bar the entrance to the Arcade, and which were closed, were blown out bodily, and a large portion of them was carried right across the street. Hundreds of windows were wrecked, offices were dismantled, solid concrete from the pavement was hurled in every direction, and a brick broke through a plate-glass window on the opposite side of the road. The whole of the front of a bank was forced out, the floor torn up, and books scattered all over the place. Other premises were also much injured, the windows wrecked, and fittings badly damaged. Inside the Arcade hundreds of panes of the lofty glass roof were shattered. The explosion also wrecked the gas and water mains, and at the entrance "a hole was made fully six yards deep, 14 yards long, and five yards wide." The damage, which cannot as yet be accurately determined, is estimated at £5000. If the explosion had occurred in the day-time the fatalities would probably have been numerous. It was said that the fault occurred at a point where the service wires laid into the Arcade are joined on to the distributing cables along St. Mary's Gate under the foot-path. The defective joining, which was the primary cause of the disaster, was old, dating from 1896. These old joinings are being rapidly replaced by improved ones, but unfortunately not in time to prevent accident. The first indications of mischief were almost like the precursors of an earthquake. At 1.45 A.M. the recording instruments pointed to a slight disturbance near Deansgate. The "standby" men were sent out but could find nothing wrong. About 2 A.M. complaints were made from the Victoria Hotel and several printing offices, but the standby men sent out again could still find nothing wrong. This little story shows what a terrible power we are using and the absolute need there is for keeping it under control. We hear far too much of fused wires.

June 16th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool School of Tropical Medicine; the Expeditions and their Work; Complimentary Dinner.

WITHIN the last few months there have arrived in Liverpool a number of scientific gentlemen who had been sent out, under various expeditions, to the tropics by the Liverpool School of Tropical Medicine. Their successful

researches and their return were made the occasion on June 14th of an interesting function at the University club, where the gentlemen in question, 12 in number, were entertained to dinner by Sir Alfred Jones, the chairman of the school. The principal guests were Professor Sir Rubert Boyce, Professor Ronald Ross, C.B., Professor J. L. Todd, Dr. J. O. W. Barratt, Dr. Anton Breinl, Dr. A. H. Hanley, C.M.G., Dr. Allan Kinghorn, Dr. H. Wolferstan Thomas, Dr. W. Prout, C.M.G., Dr. Warrington Yorke, Mr. R. E. Montgomery, and Mr. R. Newstead. A number of prominent citizens were also invited. Before proposing the toast of "The Expeditions" the chairman asked the company to honour the memory of two members of the school—Dr. Walter Myers and Dr. J. Everett Dutton—who had lost their lives on expeditions. The toast was honoured in silence, all present rising. Sir Alfred Jones, in proposing "The Expeditions of the School," said that Liverpool had done a great deal in setting an example to the world of what might be done to benefit the tropics. That gathering was representative not only of British students but of students from all countries, and especially from Canada. In Africa the death-rate had been appreciably reduced by the efforts of the various expeditions. It was a great satisfaction that other countries had worked together with them, including America, France, Germany, and Sweden. Mr. Newstead and Professor Todd replied to the toast. The toast of "The Study of Tropical Medicine" was acknowledged by Dr. J. W. W. Stephens (Walter Myers lecturer in the school). Sir Edward Evans, in proposing "The Chairman," said that one of the greatest causes for the benefit of mankind had been brought to a successful issue. This had been due very much to the energy and force exhibited on all occasions by their host. Sir Rubert Boyce testified to the great interest which Sir Alfred Jones took in regard to tropical medicine. Professor Ross also spoke to the toast. The chairman, in responding, remarked that Liverpool ought to do more for the Tropical School. He had written to the bishop of the diocese, suggesting that they ought to have a "Tropical School of Medicine Sunday," just as they had a Hospital Sunday collection.

William Mitchell Banks Memorial Lecture.

The date of the William Mitchell Banks memorial lecture has been fixed by the council of the University of Liverpool for August 4th, at 4 P.M., in the surgical theatre of the medical school. The date is a little unfortunate for obtaining a large audience owing to the holiday season, but it had to be so arranged to meet the convenience of the lecturer, Dr. Harvey Cushing of Baltimore. Dr. Cushing is associate professor of surgery at the Johns Hopkins University, Baltimore, and from his distinguished surgical reputation it is anticipated that there will be many in Liverpool desirous of hearing his address.

Liverpool Hospitals and Civic Grants.

The Liverpool finance committee has recommended the city council to authorise the Parliamentary committee to include in its next application to Parliament power to contribute a sum not exceeding £5000 towards the erection of the new building for the out-patient department of the Royal Infirmary, subject to the Infirmary committee raising the balance of the money necessary (probably £45,000) to complete the building. Towards the erection of the out-patient department of the Royal Southern Hospital the finance committee recommended a contribution by the corporation of £4000.

June 15th.

WALES.

(FROM OUR OWN CORRESPONDENT.)

Death of Mr. John Henry Williams, M.R.C.S. Eng., L.S.A.

THROUGH the death on May 27th, from pneumonia, of Mr. John Henry Williams, the medical profession in the Swansea district have lost a most agreeable and popular colleague. He was born in North Wales in 1858 and received his medical education at the London Hospital, subsequently practising in Carmarthenshire and in Morriston. About 14 years ago he settled in Aberavon, where he secured a fair share of the medical practice of the district. He took a great interest in public health matters and was medical officer of health when practising in Llanybyther, Carmarthenshire. Entering fully into the municipal life of his adopted town, he was elected on the town council of Aberavon in 1896 and was mayor in 1901. As a member of the Swansea port sanitary authority, whose area of administration extends to Port Talbot and Aberavon, he rendered conspicuous service. He was on the commission of the peace both for the county of Glamorgan and for the borough of Aberavon. Mr. Williams had only been married about eight years, and leaves a widow and two children to mourn their loss.

Cardiff Asylum.

The great increase in the population of the county of Glamorgan, which in the ten years ending 1901 was nearly 180,000, made it necessary for the county council to insist upon the Cardiff corporation providing separate accommodation apart from the Bridgend Asylum for insane persons who are chargeable to the Cardiff Union. The institution erected by the corporation for the purpose is situated just outside the boundary of the borough and has accommodation for 750 patients, with administrative facilities for 1250. It has been occupied a little more than a year, and already on the male side the available accommodation barely suffices for the needs of the town, although on the female side there are nearly 100 vacant beds. In these circumstances the asylum committee is endeavouring to prevail upon the board of guardians to provide accommodation in the union buildings for certain imbecile and epileptic patients, who it is considered might be cared for in a less costly manner than is found to be possible at the asylum. The weekly cost per patient at the asylum during the first year of its occupancy was 13*s.* 5*d.*, but this sum has now been reduced to 13*s.* 1½*d.*

The National Library of Wales.

In the distribution of the national institutions the Welsh Museum is to be located in Cardiff and the Welsh Library in Aberystwith. At a meeting of the court of governors of the National Library held on May 29th, and presided over by Sir John Williams, it was reported that six plans had been received in competition for the proposed buildings which it is intended to erect at a cost of between £70,000 and £80,000. In the plans selected the buildings are arranged in the form of a quadrangle, the administrative block being in the centre at the front, flanked on one side by the exhibition hall and on the other by the great library hall. The quadrangle is completed by the book block which is arranged to hold 332,000 volumes. In the library hall an additional 100,000 books can be arranged within sight of the readers, while the exhibition hall provides space for the exhibition of rare and interesting books, manuscripts, &c. The administrative block includes council and committee rooms, with rooms for the librarian and the president.

Crime in South Wales and Monmouthshire.

For many years past the northern, central, and western parts of Wales have been remarkable for the absence of crime among the inhabitants. In the colliery districts of South Wales and of Monmouthshire the very reverse has been the case, and there is rarely an assize held at which one or more revolting crimes have not to be investigated. At the Monmouth assizes on June 7th a young collier, 24 years of age, was sentenced to death for the murder of a farm woman who was nearly 60 years old. The evidence showed that he first of all shot her in the face, he then outraged her, and finally cut her throat. In spite of these injuries the woman was able to walk to a neighbouring farm, whence she was taken to a hospital, and she lived until May 5th, the attack having been made upon her on Feb. 20th. The evidence of the county analyst was of interest from the point of view of medical jurisprudence, for he stated that he had discovered on the man's clothing as well as on that of the woman certain fibres which had the same characteristic appearances, and that fibres of a similar kind were subsequently found in the composition of the mat upon which the woman declared she had been thrown by her assailant.

The Aberdare Medical Officer of Health.

The action of the Aberdare urban district council in attempting to place upon its medical officer of health duties which should properly be performed either by a veterinary surgeon or by an analyst has already been discussed in THE LANCET.[1] It will be remembered that the

[1] THE LANCET, March 27th, 1909, p. 930.

council, in re-appointing Dr. M. J. Rees for a further term of one year, sought to impose a condition that he should examine the milk supplied to the district for the purpose of ascertaining if it had a tuberculous origin. Dr. Rees very properly declined to accept re-appointment on these terms, and upon the matter being referred to the Local Government Board his action was upheld, and the Board recommended that he should be appointed on the same terms as formerly except that he should not come up for re-election year after year. It is gratifying to find that the council has now by a very large majority carried out this suggestion.

June 15th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Resignation of Professor John Cleland.

AT a meeting of the Court of the University of Glasgow held last week a letter was read from Professor John Cleland intimating his resignation of the Chair of Anatomy which he has held since the year 1877. Throughout this long period he has been a great personality in the University, and much respected and admired by the many generations of students who have passed through his hands. Among the more important of his writings are his thesis on the structure and mechanism of the gubernaculum testis, and his papers on the development of the skull and cranial variations, which appeared in the Philosophical Transactions of the Royal Society of London in 1862 and 1870. Recently Dr. Cleland collected in a volume, entitled "Memoirs and Memoranda in Anatomy," many of his contributions to the literature of the subject during the last 40 years. In his text-book, published in association with Dr. J. Yule Mackay in 1896, he included much of his own original work. Another volume of his, entitled "Evolution, Expression and Sensation," includes his speculations on the great problems of thought as they present themselves to the naturalist. As a monument in the University Dr. Cleland leaves behind him the splendid anatomical museum which has been built up under his constant supervision. The University owes him a deep debt of gratitude for the development of his department and also for procuring for it buildings commensurate with its importance.

Sidlaw Sanatorium.

At a meeting on June 8th the last word was said as regards the cancelling of the arrangements between the directors of the Sidlaw Sanatorium and the Dundee town council providing for the transference of the institution to the latter body. At the commencement of negotiations the donors and annual subscribers to the institution passed a resolution in favour of the agreement which was adjusted between parties, and which, besides handing over the buildings, established a new body of trustees, in whose hands the endowments should remain. As a result of the opposition to the movement the Dundee town council reversed its decision, and asked that the donors and subscribers to the sanatorium should consent to render the agreement void. As stated at a meeting on June 8th they agreed to this, but in addition they altered the constitution so that power might be possessed, subject to the approval of the Secretary for Scotland, for handing over the buildings and equipment at a future time to the corporation, and establishing, when and if that time comes, the new body of trustees.

Insanitary Condition of Lewis.

A special meeting of the Lewis district committee was held on June 9th. The meeting considered the motion of the chairman, Provost Anderson, to the effect that—

In view of the large number of insanitary houses in Lewis, caused principally through cottars having been allowed to erect houses in clusters about the dwelling houses and byres of the crofters; and, further, in view of the fact that the cottars made no contribution towards the cost of education, poor relief, roads, public health, and other public burdens, as their names do not appear on the valuation roll of the county, the district committee respectfully petition the proprietor, Major Matheson, to make provision (by arrangement with the crofters interested or otherwise) for removing these cottars from the crofts, and settling them on land to be acquired from the respective townships, moors, grazings, or skinned lands, or on other suitable lands; and, further, that the committee respectfully ask His Majesty's Government to help in the matter by giving grants or loans for the building of suitable dwelling houses for such cottars as may be so settled, and also for reclaiming portions of the skinned or other lands referred to, and that copies of this resolution be forwarded to Major Matheson, the Secretary for Scotland, and the Lord Advocate.

In submitting the motion, Provost Anderson referred to the unfortunate state of matters in Lewis as regards public health. This was entirely due to the number of houses crowded together on crofts. The only practical remedy was to have these houses removed and fresh sites obtained for new houses. He believed that the Government would help in the matter. The committee had been pressing the matter for 15 years, and he thought that the time had come when the committee must strenuously press the matter upon the proprietor and the Government. The motion was seconded and carried. The clerk was instructed in forwarding the motion to the proprietor to state that the committee would be pleased to confer with him if desired.

Aberdeen University Court: Resignation of Professor Ogston and Dr. Angus Fraser.

The Aberdeen University Court met on June 8th. The letter from Professor Alexander Ogston resigning the chair of surgery in the University was submitted. Professor Matthew Hay, who presided, moved that they enter in their minutes an expression of their appreciation of the value of the eminent services which Professor Ogston had rendered to the University as a teacher and investigator of the highest order and of their regret at his retirement. Professor Hay also referred to the loss in the medical teaching staff occasioned by the retirement of Dr. Angus Fraser from the senior physicianship at the Royal Infirmary. The reconstruction and reorganisation of the infirmary was largely due to his initiative. There was not one of their many medical graduates in all parts of the world who would not feel that the University had for them lost much of its glamour in the removal from its medical school of the names of Hamilton, Ogston, and Angus Fraser.

June 15th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Presentation to the Governor of the Apothecaries' Hall, Dublin.

THE members of the Apothecaries' Hall, which has the distinction of having been founded by the Irish Parliament in 1791, met on the evening of June 11th for the purpose of presenting a piece of plate to Dr. G. R. Seymour Stritch, J.P., their Governor, on the occasion of his marriage. Colonel Adye-Curran, M.D. Dub., F.R.C.S. Irel., occupied the chair, and amongst the other members present were Mr. C. J. Powell, Deputy Governor, Dr. E. Magennis, J.P., Mr. O'Connell Delahoyde, Mr. J. T. D. Crinion, Mr. W. F. Delany, Mr. J. Evans, Dr. E. F. Hanrahan, Mr. J. A. Whelan, Dr. J. C. McWalter, and Mr. H. W. Mason. Colonel Adye-Curran remarked that it was a unique circumstance to have a Governor of the Apothecaries' Hall married during his year of office, although they had an unbroken series of men occupying that honoured post for 150 years. He begged Dr. Stritch to accept of the service of plate, not for its intrinsic value, but as a proof of the high esteem in which he was held by his colleagues for his genuine good fellowship, his high scientific attainments, his invariably courteous demeanour, and his uniformly amiable disposition. He trusted that both himself and Mrs. Stritch would long be spared to brighten the lives of the directors by their friendship. Mr. Powell, Dr. Magennis, and other members of the board also felicitated Dr. Stritch on his marriage and expressed their delight at being able to give him some mark of their appreciation. Dr. Stritch, in reply, thanked his colleagues for their generous gift and stated that it was the proudest moment of his life and the consummation of all his ambition. He deemed it a very distinguished honour to have been elected President of that ancient corporation, the oldest licensing board in Ireland, but the generous gift of his friends had almost overwhelmed him with emotion and pride. All his life he had been averse from receiving testimonials, but this gift was so spontaneous that it would be cherished by him and his descendants as their most precious heirloom. Their presentation would stimulate him to renewed efforts in the cause of medical education in Ireland to the end of his life.

Cork Medical and Surgical Society.

The annual general meeting of this society was held on May 26th. The principal business was the election of officers

for the session 1909–10. The following were the results:—Dr. D. T. Barry, professor of physiology, Queen's College, Cork, was elected President, and Dr. J. Booth Vice-President. Dr. Charles B. Pearson was elected honorary treasurer and Mr. Edward Murphy honorary librarian. Mr. James T. O'Connor was elected secretary. The council is constituted as follows: Dr. C. Y. Pearson, Mr. P. G. Lee, Dr. T. G. Atkins, Mr. Moore, Dr. M. Cagney, Dr. J. Cotter, and Dr. Lucy E. Smith.

The Belfast Corporation and the Health Commission.

At a special meeting of the city council of Belfast held on June 9th, on the motion of the Earl of Shaftesbury, it was decided by 17 votes to 9 to instruct the finance committee to pay the Local Government Board the sum demanded by it (£600) in respect of the cost of the Health Commission for the expenses of the three commissioners outside Ireland, Colonel Harding (chairman), Dr. L. W. D. Mair (London), and Dr. A. K. Chalmers (Glasgow).

The Belfast Board of Guardians.

At the annual meeting of the Belfast board of guardians held on June 9th Mr. J. S. Bryars was re-elected chairman of the board for the ensuing year. One of the older members of the board, in seconding Mr. Bryars's election, said no better chairman had occupied the position during his long period of membership.

Double Tenancies in Belfast.

There is nothing worse in Belfast from a public health point of view than the continued existence of double tenancies. The evil, though condemned by leading citizens and judges from the bench, and though well known to the public health committee, has existed for years, and nothing was really done to cope with it until the authorities were stung by the report of the Public Health Commission, which said:—

> This double tenancy was not alleged to be necessary even on the ground of poverty of the tenants, yet it has been tolerated for years, although the practice is well known both to the corporation and to the public health department. Houses that are inadequately provided with the primary requirements of a civilised existence should be closed as unfit for habitation. In our opinion the corporation should spare no effort to put an end to this unsatisfactory condition as to housing in Belfast (p. 78, Report of Belfast Health Commission).

The public health committee then made a sort of attempt to grapple with the evil. However, at a meeting of the committee held on June 10th it was decided to rescind a previous resolution as to serving of notices to provide the necessary sanitary accommodation, the excuse being put forward that the landlords of such abominable property prefer to give up possession of the dwellings rather than comply with the public health requirements, and that it was almost impossible for the inhabitants to obtain other dwellings. One of the Belfast daily papers, the *Northern Whig* of June 11th, in a leading article comments as follows on this action of the public health committee of Belfast:—

> It is the sheerest nonsense to pretend that there is not sufficient house accommodation in Belfast for the entire population. Even in the districts where the double tenancies exist there are plenty of vacant houses, and we say most emphatically that the public health authorities have no right to favour slum landlords who care nothing about the conditions under which their tenants live. If the citizens could be brought to realise even faintly the conditions under which these miserable people live they would not only sweep out the double tenancies but they would drive out of public life the men who permit such things. It is a disgrace to the authorities that in a city professing to be Christian people should be allowed to live in the shocking surroundings revealed by the Health Commission. We have ceased hoping that any remedy will be found by the public health committee. It is always going to do something, but it never does anything that is likely to get rid of the scandal. On the contrary, its action yesterday shows that it is prepared to tolerate what every competent person has condemned as a blot on the city. If the corporation was alive to the necessities of the case, and if it considered nothing except the public good, it would immediately relieve the public health committee of duties which it discharges inefficiently, and appoint men who would see that hundreds of citizens were not allowed to live under conditions that would be a disgrace even to Darkest Africa.

This is indeed hitting without the gloves.

June 15th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Operative Treatment of Leukoplakia of the Tongue.

AT a meeting of the Société de l'Internat des Hôpitaux de Paris held on May 27th M. Fourmestraux described the case of a patient suffering from extensive leukoplakia of the tongue and treated by a slight modification of Morestin's operation—namely, complete detachment of the mucous membrane of the tongue. He called attention to the unsatisfactory nature of the results obtained in the great majority of cases by medicinal and specific treatment. The use of the bistoury for this purpose required general anæsthesia and the same precautions as in removal of cancer of the tongue, including Rose's position, short anæsthesia, and fixation of the tongue. Local or regional anæsthesia was only indicated in circumscribed leukoplakia. As in operations for cancer of the tongue, the great danger consisted in the supervention of deglutition broncho-pneumonia. Frequent washing of the mouth and as short as possible a period of confinement to bed were essential.

Sarcoma of the Scapula.

At a meeting of the Surgical Society held on June 2nd M. Mauclaire described a case communicated to him by M. Le Fort, the patient being a man, 32 years of age, who suffered from a sarcomatous growth of the scapula as large as the fist and of seven months' duration. After removal of the growth M. Le Fort endeavoured to form a humero-clavicular articulation by suturing the bones together. Primary union occurred. The sarcoma was of the nature of myeloplaxoma. Two months afterwards the movements of the limb were tolerably free, but four months later there was a recurrence of the disease which necessitated disarticulation of the clavicle for the complete removal of the growth. At the time of the operation a hissing sound was heard on two occasions, showing that air had been admitted into the subclavian vein. This had no immediate consequence, but three-quarters of an hour after the operation hemiplegia of the left side made its appearance, lasting, however, only a few days. Some months later the patient succumbed to a fresh extension of the disease, which had invaded the lung. M. Le Fort did not think that the hemiplegia was due to the entrance of air into the vein. He referred to the satisfactory action of the new articulation, which formed a kind of pseudarthrosis. M. Mauclaire said that in his opinion it would be useful for a patient in such circumstances to wear some kind of mechanical support for the limb, because pain might arise from dragging on the nerves and retracted vessels.

Chronic Inflammatory Lesions Produced by a New Mycelium.

At the same meeting of the Surgical Society M. Auvray gave an interesting description of a chronic inflammatory lesion which closely resembled tuberculosis but was due to the hemispora stellata, a fungus recently described by Villemin. The case recorded by M. Auvray was the second of its kind and has been very carefully examined. The patient was a man suffering from an inflammatory swelling in the region beneath the angle of the jaw; it was quite superficial but of so chronic a character as to have the appearance of a tuberculous lesion. After removal M. Auvray had it examined histologically and also had cultures made. Structurally it was very similar to tuberculous tissue, having giant cells surrounded by epithelioid cells. Cultivations yielded no evidence of tuberculosis but only very pure cultures of hemispora stellata. The lesions due to this fungus were therefore both clinically and histologically very similar to those of tuberculosis.

Bread-making by Machinery.

At the Academy of Medicine on June 1st M. Railliet said that the hand-kneading of dough by bakers was not without possibilities of danger for the consumers of the bread. In contrast with this primitive system he recommended the use of the dough-kneading machine and mentioned the satisfactory trials of it which had been made by the association (*syndicat*) of Paris bakers under the supervision of Professor Ringelmann and Professor Lindet. M. Railliet declared that the machine-made bread was not only in quality and appearance quite as good as the hand-made but was also cheaper. The machine fulfilled every hygienic requirement and saved the working bakers from the excessive fatigue which was so favourable to the development of tuberculosis. On these grounds machine-made bread presented obvious advantages from the consumer's point of view.

Mutual Aid Associations and Medical Practice.

The Ministry of Labour and National Thrift (*Ministère du Travail et de la Prévoyance Sociale*) has published a report on the operations of mutual aid societies during the year 1904. The section on medical and pharmaceutical expenses is very interesting. In that year the disbursements of the free

societies (*sociétés libres*) included the payment of 1,600,000 francs for medical fees by 1505 societies and 792,457 francs for pharmaceutical charges by 1466 societies, the number of patients being 99,550. Another group of societies (*sociétés approuvées*) had in the same year 446,392 patients on account of whom 4,064,151 francs were paid to the medical practitioners and 4,765,166 francs to the pharmacists. In the *sociétés approuvées* each patient therefore cost 9 francs for medical advice and 10 francs 70 centimes for medicine, whilst in the *sociétés libres* the analogous charges were about 6 francs for medical advice and 8 francs for medicine. In the *sociétés approuvées* the 446,392 patients were ill for an aggregate of 7,187,441 days, and in the *sociétés libres* the 99,550 patients were ill for an aggregate of 1,456,935 days, or a general average of 14 days' illness per patient. For his attendance during these 14 days the medical practitioner received 6 francs from the *sociétés libres* and 9 francs from the *sociétés approuvées*.

Treatment of Cancer.

At a meeting of the Academy of Medicine held on May 25th M. Tuffier gave an account of his treatment of cancer by various physical methods recommended of late years, including x rays, high-frequency currents, radium, and superheated air. In his opinion, none of these methods of treatment were ever followed by genuine recoveries, but the observation of the manner in which they individually acted was an interesting study. The x rays had a specific influence on the cancer cells, but not on the other anatomical elements; this influence on the cancer cells was, however, limited to a depth of less than two millimetres from the surface. Radium also had a selective power of attacking cancer cells, and in course of time this effect might extend to a depth of two centimetres from the surface. High-frequency currents had no selective action on the cancer cells; whatever slight effect they produced was distributed over the tissues generally. A jet of air heated to 300° or 400° C. acted not unlike a high-frequency current, only rather more capriciously.

Medical Attendance on Pauper Patients.

The medical practitioners of the town of Chalon-sur-Saone, being dissatisfied with the system under which medical advice is given free of charge both in that town and in the entire department, have sent an ultimatum to the municipality and have resolved to cease giving attendance under the present system if the modification proposed by them is not adopted by June 30th. They request that all the medical men practising (*patentés*) in Chalon and willing to accept the position shall be placed on the list of medical attendants of poor persons. Patients will be seen at the relief office (*bureau de bienfaisance*) on Mondays and Wednesdays at 10 A.M. by the medical men on the list, each of them serving in his turn for a month at a time with a remuneration of 5 francs for each attendance. Patients requiring to be visited at home may select their medical attendants, who will receive 1 franc for each visit.

June 12th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

Food and Clothes for Indigent School Children.

Dr. F. Elsrismann, town councillor and head of the sanitary department of the town of Zürich, has just published a lengthy report on the gratuitous supply of food and clothes to school children in Zürich. For many years poor school children in Switzerland have received food (either breakfast or lunch) supplied partly from private sources and partly from local district authorities at the public expense. Of late years the expenditure to be met by the ratepayers has been rapidly increasing. Already, in 1894, Dr. A. Huber reported that out of a total of 475,000 school children attending the primary schools and aged from 6 to 11 years, 25,000 were supplied with food and 30,000 with clothes. Nearly one-third (28 per cent.) of all the public schools in Switzerland had introduced this system. The children in question either lived more than half an hour's journey from the school-house or were underfed at home. In Zürich the system is as follows. A minority of the children, some 700, receive milk diet, the majority are served with a simple soup meal, sometimes with the addition of meat, for such reasons as the poverty of the parents, the poor state of nutrition of the children, absence of the parents from home at midday, the large number of the family, and the unemployment or illness of the parents. The number of children thus provided for in Zürich, which has a population of 180,000, has risen from 256 in 1894 to 2251 in 1902–03, and to 3334 in 1907–08. The annual outlay has increased from 7200 francs (£88) in 1900 to 48,367 francs (nearly £2000) in 1907–08. During the last year over £2400 were spent for this purpose. The expense of each meal varies from 1½*d.* to 2½*d.* An increasing number of children were furnished with necessary articles of clothing (785 in 1907–08), and the expenses reached a sum of 5407 francs, or about £216. The great amount that is done for the physical welfare of school-children in Zürich is evidenced by the further facts that in 1908–09 a sum of £2160 was spent for afternoon and evening classes of supervision and recreation, also during holidays, and a further sum of £1600 to provide 1000 children with a three weeks' stay in the Alps.

Infantile Mortality in Switzerland.

The Federal Statistical Office at Berne has published the following details on the mortality of children under the age of one year. Since 1876 the statistics show that for every five years the mortality per 1000 births has undergone a continual decrease from 188 to 134, the last-mentioned figures being for the period 1901–05. This decrease has continued in 1906 and 1907, when the deaths were respectively 126 and 121 per 1000 births. The different cantons vary considerably in this respect, some having a very low infantile mortality, such as Unterwalden with 79 deaths per 1000 births. In other cantons the corresponding figures are exceptionally high—namely, 157 in Valais, 187 in Fribourg, and 188 in Tessin; whereas Vaud and Neuchâtel with 144, Zürich with 124, and Berne with 121 deaths per 1000 births keep about the average.

Zürich, June 12th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Darwin Centenary.

THE catholicity of science will have fresh illustration next week in honouring the hundredth anniversary of the birthday of Charles Darwin. Every civilised nation will join in the *festa*—none more cordially than the Italian. For months past her press, medical and lay, scientific and political, metropolitan and provincial, has either devoted special articles to the theme or given extended reports of *éloges* of the master from academic chairs. Among these latter, one of the best inspired was that of the professor of the history of the natural sciences in the Roman University, Dr. Mario Cermenati, summarised about a year ago in THE LANCET; while among the independent tributes offered by individual students to "the immortal memory" none will be read with warmer appreciation than the "Profilo," as he modestly calls it, of Dr. Alberto Alberti.[1] A brighter biography of the author of the "Origin of Species" it would be difficult to find in the same compass, and the estimate of the man and his work will be seen to have the impartiality due to a detachment which, according to Madame de Staël, makes the "judgment of foreigners that of a contemporaneous posterity." One merit it will be found to possess—a merit, I regret to say, not in all cases characteristic of Italian treatment of the same theme—abstention from anti-religious or anti-Christian polemics. As already pointed out in these columns, many tributes to Darwin, particularly in Italy, have been marred by an aggressive attitude towards the "creeds," national or nonconformist, an attitude with which Darwin himself was not in sympathy and would certainly have been the last to countenance or to encourage.

At the Vatican.

The edile, under the inspiration of Pius X., has been busy in the apostolic palace recasting the accommodation of the *personnel*, high and low, to the great improvement of its conditions, sanitary and other. Hitherto the said *personnel* has been scattered up and down and right and left in the vast tenement, or congeries of tenements, but now

[1] Carlo Darwin: uno Studio di Alberto Alberti. Modena: A. Formiggini. 1909. Pp. 78. Prezzo 1 fr.

they will find shelter in the "grandioso edifizio" which is just completed and only waiting to be occupied. Any impatience on the part of the prospective lodgers to "enter into residence" has, however, been met by a wise veto emanating from His Holiness, to wit, that they must find temporary accommodation elsewhere until the close of the summer months, by which time the brand-new "edifizio" will be thoroughly dried. So all the *personnel* will have to clear out with the exception of the Cardinal Vicar (Merry del Val), Cardinal Gasparri, the Monsignori Bisleti, Misciatelli, and Pifferi, and the secretaries and private chaplains. Another wholesome provision will be the transference of the Vatican Pharmacy from the Cortile of San Damaso to the new edifice. The Vatican will thus be spared the unsightly spectacle, not to say the positive inconvenience, of men, women, and children armed with medicine bottles or baskets coming in from the Borgo or adjacent quarters and meeting the cardinals, archbishops, and other dignitaries face to face on their way to or from the presence of the Holy Father. The Pharmacy, I may add, sharing the privileges accorded to the Holy See under the "law of the guarantees"—a law framed by the Italian Government and partially acquiesced in by the Vatican—can provide medicines, surgical appliances, and such like articles at a cheaper rate than the rival establishments outside, as it pays no octroi duty, nor "business tax," nor house-rent, and gets its lighting and heating gratis. It is much resorted to accordingly by more than the "faithful," and has been found a convenient and freely utilised mode of admitting to this or that official the importunate client, or the needy petitioner, or even the decently attired mendicant. So that the imminent changes in the accommodation of the Apostolic community will not only make for improved sanitation, for economy of time, and for acceleration of business, but will also conduce to the amenities of a quarter which has long been, and is destined long to continue, the most largely and multifariously frequented in Rome.

June 13th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Hot Weather and the Schools.

IN Austria, where compulsory education is responsible for the appearance of nearly all children between six and 14 years of age in the schools twice daily, the intense heat in the months of May to July has often caused much discomfort to delicate children, who had to be in school from 2 to 4 P.M. Several times the school boards have attempted to introduce a system of continuous attendance for five hours from 8 A.M. to 1 P.M., thereby saving the children and the teachers the necessity of coming twice a day to school. The Ministry of Education has, however, this year tried to make the children come twice a day to school, in spite of the "Hitzeferien" (hot-weather holidays), as these idle afternoons are appropriately termed. Parents naturally made objections to this regulation and conflicts resulted. Finally the old system of reducing the school attendance to four hours before noon and leaving out the afternoon lessons was agreed to if the temperature at 10 A.M. reaches 20° C. (77° F.). At the same time it has been decided to bring the next school term to an end on July 1st and to have the holidays in July and August, which are the hottest months with us, and not as at present from the middle of July to the middle of September. The changes are due to the reports of several school medical officers, who as yet are too few in number to compel attention, but whose reports are already much appreciated.

The Jubilee Fund "for the Children."

At the recent jubilee of the Emperor a fund was collected bearing the title "Für das Kind" (for the children), as the Emperor wished that the money intended to be laid out on the jubilee celebrations should be devoted to charitable purposes, notably for the benefit of children. The fund has now been handed over to the organisation committee, which consists of 56 members, mostly presidents of various charitable institutions, medical men, and five ladies. The objects of the fund are: (1) to found model institutions for the protection of children; (2) to make grants in aid of already existing institutions of this kind; and (3) to arouse among the general population an interest in measures intended for the protection of children. All endeavours to promote the mental and bodily development of the juvenile portion of the population come within the scope of the fund, which it is intended to augment by constant donations and collections, so that it will be possible to grant large sums out of this fund for the above-mentioned purposes. The idea is to make the administration something like that of the King Edward Hospital Fund in England, although, of course, the sums collected here do not approach those which are subscribed in England.

Professional Secrecy and Sources of Public Danger.

In a case heard recently in a court of law the familiar question of professional secrecy and the duty of the medical practitioner towards the public and the patient were well illustrated, and much comment in medical circles has been caused by the legal decision. A medical man who was treating a female patient for syphilis acquired extra-genitally warned her that she might be a source of danger to the public owing to her position as post-mistress in a rural place. She neglected his cautions and when he saw another case of extra-genital syphilis, which could be traced to her, he informed the postmaster-general, without being asked by anybody to do so. The patient having consequently lost her appointment and suffered some other inconveniences, claimed damages from the medical man who had, without her consent, disclosed the nature of her disease to a third party. The judge decided that the medical man "had been acting in the public interest, and therefore in defence of the public, conduct which could not be considered a breach of professional secrecy." The defendant was acquitted by the jury. Now there are under consideration certain new medical regulations which stipulate that a medical practitioner must disclose the nature of a patient's illness to a legal authority *if he is asked*. In a similar case a well-known dermatologist recently found that by wilful neglect of his advice a syphilitic father infected his two children, eight and ten years of age respectively, and allowed them to continue to attend a public school where they might be a source of infection to others. The medical man accordingly made them wear large patches of grey plaster on the face, and when the school board asked for an explanation he only answered that the children were suffering from an infectious disease. The consequence was that they were excluded from school until he had given them a certificate of freedom from infection. Of course, there is often a conflict between the duty of the medical man towards the patient and his duties as a citizen. Hitherto it has been an invariable rule with the profession here to consider only the duty of the medical man towards the patient and the law itself was very strict on this point. The development of social life tends, however, to lessen the sense of personal attachment of the physician to his patients in preference to his public duty, though the majority of the profession here show on this point a decidedly conservative tendency.

The Scandal at a Lunatic Asylum.

In a previous letter I mentioned the sad occurrence in one of our lunatic asylums where a patient who had become unmanageable was actually killed by an attendant in the course of "quieting" him. The jury returned a verdict of manslaughter and the attendant, by a series of fortunate circumstances, was sent to prison for only six months. But in the course of the action it became manifest that the real culprit was to be sought for elsewhere. The system was responsible, and public indignation has been only partly allayed by the announcement that the old regulations have been replaced by new ones more in accordance with modern ideas. The false economy of placing only 19 medical men in charge of 3000 insane persons being thus exposed, it is only natural that the number of psychiatric experts in the asylums will be amply increased, and sufficient funds must be found to obtain a better class of attendant than the boards of management has hitherto been satisfied with.

June 14th.

THE CONJOINT DIPLOMA IN PUBLIC HEALTH.—We are requested to state that on and after Jan. 1st next a new syllabus will be adopted for Parts I. and II. of the examination for the Diploma in Public Health of the Royal Colleges of Physicians and Surgeons, and that such syllabus can be obtained on application to the Secretary at the Examination Hall, Victoria Embankment.

Obituary.

DR. CARLO LABUS.

BEARING an honoured name in medicine and in law—son of Dr. Pietro Labus, Director-in-chief of Military Hospitals, and brother of Dr. Stefano Labus, distinguished as a jurisconsult at the Bar and in literature—Dr. Carlo Labus succumbed on June 1st, at his native Milan, to an attack of appendicitis of only five days' duration.

He was born in 1844 and pursued his medical studies at Pavia, where he graduated in 1865. In the following year he served in his country's ranks in the campaign against Austria, filling with much ability and courage the post of army surgeon, and during the cholera epidemic which declared itself after the cessation of hostilities he did valuable service at two such distant centres as Catania and Brescia. Abandoning the medico-military career, he devoted himself exclusively to diseases of the throat, and, in prosecution of his studies, he attended many Continental cliniques—particularly in Austria, Germany, and France—in the pharyngo-laryngeal department. In 1876, by which time he had made himself a name as specialist and consultant in that group of diseases, he initiated at the Medical Congress then held at Turin a "pharyngo-laryngeal section"—the first, it is said, not only in Italy but even in other countries to be instituted at such congresses under that name. In that year he also founded in the Ospedale Maggiore of Milan, the well-appointed "Clinica Laringoiatrico." In 1878 he gave at Pavia the first course of clinical lectures ever held in that seat of learning on laryngology—an initiative which found immediate imitation in other Italian schools, and in 1880 he was president at the first International Congress on Pharyngo-laryngeal Maladies. His distinction in this field brought him many honours in Italy and abroad in the form of "associate" or "corresponding member" of numerous medico-chirurgical societies. Indefatigable in the clinique and in the consulting-room, he found time to contribute a vast number of papers to medical journals on his special subject, papers much esteemed for their independent thinking and expository power. He also invented not a few instruments for surgical intervention in special cases of laryngeal trouble, and some of these are in daily use, particularly in Italy, where also the "Fantoccio Labus," which gained the prize at the Medical Exhibition of Pisa in 1878, still holds the field. Death overtook him while engaged on the concluding chapter of what he meant to be his *magnum opus*, a treatise on "Vocal Hygiene," the publication of which is awaited with much interest by the profession in the ensuing autumn. This, and a selection from his contributions on laryngology to the "Rivista di Medicina," the "Giornale Internazionale delle Scienze Mediche," the "Archives of Laryngology," the "Annales des Maladies de l'Oreille et du Larynx," the "Revue de Laryngologie," the "Archivii Italiani di Laringologia," and the "Gazzetta degli Ospedali," of which last he was one of the founders, will testify to the professional world how much it has lost by the untimely death of the Milanese specialist and consultant, Carlo Labus.

THEOBALD M. BRYSON, L.F.P.S. GLASG., L.R.C.P. EDIN.

AFTER a prolonged illness, Mr. T. M. Bryson died on May 25th at his residence in Limavady, at the age of 65 years. Educated in Glasgow at the University and at Anderson's College, Mr. Bryson became a Licentiate of the Faculty of Physicians and Surgeons of Glasgow in 1868, and of the Royal College of Physicians of Edinburgh in 1874. He began practice in Limavady, county Derry, in 1870. A man of fine physique, genial and social in his habits, and with a sound knowledge of his profession, Mr. Bryson built up a lucrative and extensive practice in Limavady and the surrounding district. He was a justice of the peace for county Derry, and he was also coroner for the district in which he practised. Mr. Bryson was a great favourite with all classes and creeds. He leaves a widow and a daughter who is the wife of Mr. M. Higgins, L.R.C.P. & S. Edin., of Dungiven.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Pribuitkoff, *privat-docent* of neurology in the University of Moscow.—Dr. J. R. Costa, professor of physiology and of medical physics in the University of Buenos Ayres.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the Final Examination for the Fellowship held on May 14th, 17th, 18th, 19th, 20th, and 21st 73 candidates presented themselves, of whom 37 were approved and 36 were rejected. Among the successful candidates were three gentlemen (Davis Woodcock Daniels, M.B. Lond., L.R.C.P., M.R.C.S., of St. Mary's Hospital; Charles Henry Shorney Webb, M.B. Lond., L.R.C.P., M.R.C.S., of Middlesex Hospital; and Albert Edward Mortimer Woolf, L.R.C.P., M.R.C.S., Cambridge University and London Hospital) who have not yet attained the requisite age of 25 years. The Council accordingly conferred Diplomas of Fellow upon the 34 gentlemen mentioned below, who have complied with the necessary by-laws:—

Charles Henry James, Major I.M.S., L.R.C.P., M.R.C.S., St. Thomas's Hospital; Carlton Oldfield, M.D., B.S. Lond., L.R.C.P., M.R.C.S., Leeds University; Percy Montague Smith, M.D. Lond., L.R.C.P., M.R.C.S., L.S.A., St. Mary's Hospital; Edmund Arthur Dorrell, L.R.C.P., M.R.C.S., D.P.H. Lond., University College, Bristol, and St. Bartholomew's Hospital; Archibald Hugh Payan Dawnay, L.R.C.P., M.R.C.S., St. Thomas's Hospital; Walter Rothney Battye, Captain I.M.S., M.S., M.B., B.Sc. Lond., L.R.C.P., M.R.C.S., St. Thomas's and St. Bartholomew's Hospitals; Thomas Wilfrid Letchworth, M.B., B.C., B.A. Cantab., L.R.C.P., M.R.C.S., Cambridge University and St. Bartholomew's Hospital; William Herbert Forshaw, L.R.C.P., M.R.C.S., London Hospital; Aaron Levy, B.A., M.D., C.M. McGill, L.R.C.P., M.R.C.S., McGill University, Montreal, and St. Bartholomew's Hospital; John Jekyll Rainforth, M.B. Lond., L.R.C.P., M.R.C.S., London Hospital; Herbert Francis Woolfenden, M.D. Liverp., L.R.C.P., M.R.C.S., Liverpool University and London Hospital; Clifford Sidney White, M.D., B.S. Lond., M.R.C.P., M.R.C.S., University College Hospital; Robert Alfred Worthington, M.B., B.C. Cantab., L.R.C.P., M.R.C.S., Cambridge University and London Hospital; Frank Anderson Juler, M.A., M.B., B.C. Cantab., L.R.C.P., M.R.C.S., St. Mary's Hospital; Thomas Charles Clare, M.B., B.S. Lond., L.R.C.P., M.R.C.S., Birmingham University; John Davis Barris, B.A. Cantab., L.R.C.P., M.R.C.S., Cambridge University and St. Bartholomew's Hospital; Thomas Bramley Layton, M.B., M.S. Lond., L.R.C.P., M.R.C.S., Guy's Hospital; James Eustace Radcliffe McDonagh, L.R.C.P., M.R.C.S., St. Bartholomew's Hospital; Sydney Gray Macdonald, M.A., M.B., B.C. Cantab., L.R.C.P., M.R.C.S., St. Thomas Hospital; Hamilton Ernest Quick, M.B., B.S., B.Sc. Lond., L.R.C.P., M.R.C.S., St. Bartholomew's Hospital; Rupert Farrant, L.R.C.P., M.R.C.S., Westminster Hospital; Alexander Fleming, M.B., B.S. Lond., L.R.C.P., M.R.C.S., St. Mary's Hospital; James Leonard Joyce, L.R.C.P., M.R.C.S., Cambridge University and St. Bartholomew's Hospital; Christian Frederic Louis Leipoldt, L.R.C.P., M.R.C.S., Guy's Hospital; William Fulton Neil, M.B., Ch.B. New Zealand, L.R.C.P., M.R.C.S., New Zealand University and London Hospital; Cecil Frederick Robertson, M.B., B.S. London, L.R.C.P., M.R.C.S., Middlesex Hospital; Edward Kenneth Martin, M.B., B.S. Lond., L.R.C.P., M.R.C.S., University College Hospital; Robert Ollerenshaw, M.D., Ch.B. Vict., L.R.C.P., M.R.C.S., Manchester University and London Hospital; Hugh Raymond Guy Poate, M.B., Ch.M. Syd., L.R.C.P., M.R.C.S., Sydney University and London Hospital; Frederick Charles Pybus, M.B., B.S. Durh., L.R.C.P., M.R.C.S., Durham University and St. Bartholomew's Hospital; Vincent Zachary Cope, M.D., B.S. Lond., St. Mary's Hospital; Arthur Cecil Devereux, M.B., B.C. Edin., Edinburgh University and Middlesex Hospital; William Maxwell Munby, M.B., Ch.B. Edin., Edinburgh University and London Hospital; and Laurence Christopher Panting, M.A., M.D., B.Ch. Oxon., Oxford University and Guy's Hospital.

The Diploma of Member was also conferred by the Council upon the following gentleman, who has now complied with the by-laws:—

William John Smith, M.B. Toronto, Toronto University and London Hospital.

Licences in Dental Surgery were conferred upon the following gentlemen who have complied with the necessary by-laws:—

Victor Charles Burt, Charing Cross and Royal Dental Hospitals; Abraham Cohen, Guy's Hospital; Richard Highton, Liverpool University; and George Garfield Packe, M.B. Cantab., L.R.C.P., M.R.C.S., St. George's and Royal Dental Hospitals.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Hermann Steudel, who has charge of the Chemical Department of the Physiological Institute, has been appointed Extraordinary Professor of Physiology and Chemistry. Dr. Köllner and Dr. Leber, assistants in the First Ophthalmological Clinic, have been recognised as *privat-docenten* of Ophthalmology. Dr. Doenitz, Assistant in the Surgical Clinic in the Ziegelstrasse, has been recognised as *privat-docent* of Surgery. Dr. Richard Freund, of

Halle, has been recognised as *privat-docent* of Gynæcology; and Dr. Tomasczewski as *privat-docent* of Dermatology.—*Greifswald:* Dr. Lochlein, Assistant in the University Clinic, has been recognised as *privat-docent* of Ophthalmology.—*Vienna:* Dr. Robert Bárányi has been recognised as *privat-docent* of Otology.

A CONFERENCE on the Medical Inspection and Treatment of School Children will be held at the Institute of Hygiene on June 21st, when Sir William H. Bennett will preside over a gathering of medical men who have arranged to discuss this important subject.

RESEARCH DEFENCE SOCIETY.—The annual general meeting of this society will be held at the house of the Royal Society of Medicine, 20, Hanover-square, W., on Friday, June 25th, at 5 o'clock. The Earl of Cromer, President of the society, will take the chair. Other speakers will be Sir James Dewar, Sir Arthur Conan Doyle, the Hon. Walter Guinness, and Professor E. H. Starling.

PRESENTATION TO A MEDICAL PRACTITIONER.—After the distribution of medals and certificates to the Helston (Cornwall) branch of the St. John Ambulance Association, which took place recently, the mayor, on behalf of the class, presented Mr. Mark Ronald Taylor, L.R.C.P. Lond., M.R.C.S. Eng., with a silver-mounted ebony walking-stick, which was suitably engraved, in appreciation of his services as honorary lecturer.

THE LONDON COUNTY COUNCIL AND THE MEDICAL TREATMENT OF LONDON SCHOOL CHILDREN.—The Education Committee reported at the meeting of the London County Council on June 15th that the authorities of the Hospital for Sick Children, Great Ormond-street, have offered to provide treatment for 25 school children per week for a period not exceeding six months, provided that the cases attending on any one day shall be selected so as to avoid placing undue pressure on any one department of the hospital. It is suggested that the cases should be divided between the ophthalmic and aural departments. The Education Committee proposed that children from eight neighbouring schools should be selected to take advantage of the offer, as they thought that an experiment on this limited scale should prove valuable as a guide when the Council deals with the general question of medical treatment. The offer was accepted by the Council.

ROYAL DENTAL HOSPITAL AND LONDON SCHOOL OF DENTAL SURGERY.—A series of post-graduate lectures (as follows) will be given during the months of October and November, 1909, on Tuesdays, at 6 P.M.:—Oct. 12th, "Some Pathogenic Organisms found in the Mouth and their Channels of Infection," Mr. Howard Mummery; 19th and 26th, "Periodontal Disease," Mr. J. F. Colyer; Nov. 2nd, "Stagnation and Drainage," Mr J. G. Turner; 9th, "The Vaccine Treatment in Dental Surgery," Dr. F. A. Bainbridge; 16th, "Dental Radiographs," Mr. Charles A. Clark; 23rd, "Complications arising from Pathological Conditions of the Third Molar," Mr. Warwick James. The fee for the course is £2 2*s.*, but past and present students of the hospital and internal students of the University of London will be admitted free.

GUY'S HOSPITAL MEDICAL SCHOOL.—As will be seen by an advertisement in another column applications are invited for a Douglas Research Studentship in Actinotherapeutics. The honorarium of the studentship is £300 per annum, paid quarterly in advance. The following are the main conditions under which the studentship is awarded. The student must possess a registrable qualification to practise under the Medical Acts and will be appointed by the treasurer on the nomination of a special board of electors. The appointment is held during the pleasure of the treasurer for one year. The student must not hold any office or appointment or be engaged in any business or profession which in the opinion of the treasurer would prevent him from devoting himself with due diligence to original research. If the treasurer is of opinion that the student is not fulfilling the purposes of the studentship the treasurer will have power to determine that the tenure of the emoluments of the studentship by the student shall cease. The student will have to report periodically to the treasurer a detailed account of his investigations. Candidates should apply to the treasurer, superintendent's office, Guy's Hospital, not later than June 28th, and should furnish copies of not more than three recent testimonials. The successful applicant will commence his work on July 15th, 1909. Further information may be obtained by application to the Dean, Medical School Office, Guy's Hospital, S.E.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.—The Fishmongers' Company have awarded a University Exhibition of £60 per annum for three years to Miss Naomi Tribe, a student of the school. The council have appointed Miss Kate Brown, M.B., B.S., to be demonstrator in anatomy and Curator of the Museum.

SMOKE ABATEMENT.—The London County Council on June 15th decided, by 98 votes to 2, to promote legislation next year to deal more effectively with the smoke nuisance. The report of the Public Control Committee giving the reasons for this step was dealt with in THE LANCET of May 15th. It is desired to delete from the Public Health (London) Act, 1891, the qualifying word "black" as applied to smoke which may be regarded as causing a nuisance, and to extend the operations of the measure to infringements arising from premises of Government departments, local authorities, and companies having statutory powers. Authority will also be sought to spend not more than £500 per annum in the advancement of measures for the abatement of smoke nuisance, more especially that caused by the domestic open fire.

AMBULANCE COMPETITION.—The competition for the Hamilton Challenge Bowl took place on June 14th at the headquarters of the 5th London Rifles, Bunhill-row, City, and was won by a squad of six men under Lance-Corporal A. Gray, drawn from the 1st City of London Field Ambulance, R.A.M.C.T.F. The subjects included first-aid and stretcher drill, and the competition was open to all the medical units of the 1st and 2nd London Divisions Territorial Force and to all regimental stretcher-bearers and cadet corps. The examiners were Surgeon-Colonel W. Culver James, Honourable Artillery Company, and Major A. Ducat, Royal Artillery Corps, T.F. The challenge bowl was presented by the late Surgeon-General J. B. Hamilton, A.M.S., and has been keenly competed for by non-commissioned officers and men of the Volunteer Force for many years. Colonel P. B. Giles, A.M.O., 1st London Division, in announcing the result, stated that the challenge bowl would be held for 12 months by the officer commanding the 1st City of London Field Ambulance and that the conditions of the competition would be changed from time to time.

KING'S COLLEGE HOSPITAL CARNIVAL.—One of the chief features of the carnival which is to be held at the Crystal Palace on July 1st in aid of the King's College Hospital Removal Fund will be the Gipsy Encampment, which is being organised by Mrs. W. S. Playfair. Among those who have promised to lend their aid to this presentation of Romany life are Mr. Jacomb Hood (the artist), Mr. Pett Ridge (the novelist), Lady Florence Pery, Mr. and Mrs. George Alexander and the students of *Old Heidelberg*, Miss Lilian Braithwaite, the Misses Dickens (grand-daughters of the novelist), and Mr. Nigel Playfair. A free flower show is also being organised by Miss Stacey, and two artists and the King's gardener will be the judges. Prizes of silver medals and a silver cup will be awarded in the table decorations competition. Signor Luigi Benedetto and his Italian troop, M. Belenski's Viennese Band, and the Ladies' Forget-me-not Band will also take part in the carnival. We understand that the Gipsy Encampment will be made as realistic as possible and that the artists taking part in it will be specially instructed by gipsies.

THE BOWMAN LECTURE OF THE OPHTHALMOLOGICAL SOCIETY.—On June 11th Mr. E. Nettleship delivered the Bowman lecture on Some Diseases of the Eye Illustrating Heredity. The subject was a very wide one, both in view of the theories involved and the number of diseases considered, and was further elaborated by the number and length of family pedigrees illustrating the recurrence of such disorders. Commencing with a statement of the Mendelian theory and a consideration of the possible permutations and combinations of hereditary influences controlling the appearance of hereditary tendencies in successive generations, in first matings, cousin marriages, and the several forms of sex-limited disease, the speaker showed the tendency to

anticipate as regards age of incidence in successive generations, both in such general disorders as pulmonary tuberculosis, diabetes, hereditary ataxy, and jaundice with enlarged spleen, and the many diseases of the eye with which he was more directly concerned. These included such widely different conditions as Leber's disease (hereditary optic atrophy), cataract (senile, juvenile, lamellar, and coraliform), glaucoma, retinitis pigmentosa, reticular keratitis, albinism, night blindness, day blindness (total colour blindness), partial colour blindness, and nystagmus. These were considered from the point of view of prognosis as to probable appearance and possibility of recovery, the occurrence of associated disease and early death, and the influence of consanguinity. A notable feature in the general purview was a striking correspondence between the actual figures worked out from collected cases of these several diseases and the theoretical numbers resulting from the application of Mendel's views. The material dealt with was much too extensive for the usual limits of a lecture, even the portions selected occupying an hour and a quarter in delivery. The subject, however, is alive with interest, and the full account of this valuable contribution will appear in the Transactions of the Ophthalmological Society.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Superannuation of Asylum Officers.

THE Select Committee of the House of Commons which has been taking evidence on the superannuation of asylum officers in connexion with Sir WILLIAM COLLINS'S Bill on the subject is now in a position to consider the terms of its report. The inquiry has extended over two months and witnesses have been heard from England, Scotland, and Ireland.

The Housing and Town Planning Bill.

The Housing and Town Planning Bill is to be passed through the House of Commons under a closure resolution. The Government has carried a motion allocating three days to the subsequent stages of the Bill. It has already received a second reading. It will be remembered that the Bill was considered at length by a Standing Committee of the House of Commons last year, but it was not further proceeded with then.

The Spirit Duties.

Mr. LLOYD GEORGE has been receiving a series of deputations with regard to the increase of 3*s*. 9*d*. per gallon in the spirit duties. The Chancellor of the Exchequer has not committed himself to any modification of this impost, but he has thrown out a suggestion to the Scotch whisky distillers, which if it is ultimately adopted will give an impetus to the maturing of the spirit in bond. Mr. LLOYD GEORGE has asked the distillers to submit to him a plan for levying a graduated scale of duty, which would fall heavily on raw spirits passing into consumption soon after manufacture, but more lightly on those which had been matured for some years. This plan does not meet with the approval of some distillers, but others are favourable to it. They are considering the question and will probably have another meeting with the Chancellor of the Exchequer when they have formed more detailed views on the subject.

HOUSE OF COMMONS.

THURSDAY, JUNE 10TH.

Enteric Germ-carriers Amongst Soldiers.

Captain CLIVE asked the Secretary of State for War whether with reference to the seven non-commissioned officers and men detained at Millbank Hospital as enteric germ-carriers he would state under what section of the Army Act these men were indefinitely deprived of their liberty.—Mr. HALDANE wrote in reply: I have fully explained to the honourable and gallant Member the circumstances under which these men are undergoing special treatment at Millbank Hospital. Papers on the subject will shortly be in the hands of honourable Members. A sick soldier can be ordered to be confined in hospital, and disobedience to such lawful command would be punishable under the Army Act on conviction by court-martial.

Captain BARING also asked the right honourable gentleman whether the non-commissioned officers and men now detained as germ-carriers at Millbank were detained for the public convenience and not because they were unfit for military duty or for employment in civil life; and whether, in the circumstances, he would remit the hospital stoppages to which these men were subject.—Mr. HALDANE furnished the following reply: As I have already informed the House, these cases were considered dangerous to their comrades in the barracks and they are, therefore, detained in the interests of all with whom they might otherwise come in contact in civil or military life. In accordance with the regulations in cases of sickness these men have had half their hospital stoppages remitted.

Bulford Camp Hospital.

Mr. JOYNSON-HICKS asked the Secretary of State for War how many men had been sent to Bulford Camp Hospital during the present period of training, how many had been dealt with in brigade and regimental hospital tents, and what proportion of such cases were traceable to preventable causes, such as inadequate supply of tent boards and clothing.—Mr. HALDANE answered: A report has been called for, but the information has not yet reached the War Office.

The Pharmacy Act, 1908.

Mr. SNOWDEN asked the Secretary of State for the Home Department whether he was aware that many licences were being granted under the Pharmacy Act, 1908, to persons other than qualified chemists to sell poisonous substances for agricultural purposes, and that these licences were being granted in large industrial towns where existing facilities were ample; and whether, in view of the definite statement made by the Under Secretary of State on the second reading of the Pharmacy Bill that it was not intended to license traders where the facilities of supply by chemists were ample, he would take steps to prevent the wide and indiscriminate granting of licences to non-qualified traders.—Mr. GLADSTONE replied: The Privy Council Office, which is the department concerned in administering the Act, informs me that there is no evidence that local authorities generally have disregarded its provisions and the regulations made under it, though it is possible that instances of such disregard may have occurred in some localities. The Act charges the local authority with the duty of considering whether the reasonable requirements of the public are satisfied, and these requirements may not in some cases be met by the facilities given by chemists. If the honourable Member knows any cases in which a grievance exists I will be glad if he will bring them to my notice.

Mr. HAYDEN asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that in considering applications for licences under the Poisons and Pharmacy Act, 1908, and to assist them in their decisions the county councils of Ireland found it necessary to make inquiries as to whether the applicants fulfilled the conditions laid down in the regulations promulgated by the Lord Lieutenant under the Act and as to the circumstances and needs of the locality; whether they can rely upon the assistance and cooperation of the Royal Irish Constabulary in acquiring this necessary information; and, if not, whether he would state what other machinery was at the disposal of the county councils for securing such information.—Mr. BIRRELL replied: The duty of granting licences is by the Act thrown on the local authorities and any inquiries necessary to enable them to deal with applications should be made by their own officers. The police cannot be asked to undertake the duties of the local authorities in the matter, but no doubt, if asked, they will furnish any information within their knowledge as to any particular applicant which the local authorities cannot otherwise obtain.

Death Certification.

Sir WALTER FOSTER asked the President of the Local Government Board whether his attention had been called to the case of Mary Jane Walker at Wolverhampton, who narrowly escaped premature burial owing to a medical man having given a certificate of her death without having viewed the body; and whether he would take steps so to amend the law with regard to the certification of death as to render such dangers impossible in the future.—Mr. BURNS wrote in reply: I have seen a newspaper report of the proceedings at the inquest in this case. I am afraid I could not undertake to propose legislation on the subject of death certification during the present session.

New-born Calves as Food.

Mr. CATHCART WASON asked the President of the Local Government Board whether he could state the number of newly born male calves that were butchered annually in the United Kingdom and Ireland; whether he had any information showing that these new-born calves were suitable as wholesome food; and if not, whether he had any power to prevent such so-called meat being sold or offered for sale.—Mr. BURNS (by written answer) replied: I am not able to give the figures asked for in the first part of the question, and I am not aware that the information exists. The carcass of a newly-born calf would usually be regarded as unfit for food and would be liable to be dealt with by meat inspectors accordingly. If it was necessary to prevent danger arising to public health from the importation or preparation of these calves when intended for sale for human consumption regulations could be made on the subject under the Public Health (Regulations as to Food) Act, 1907; but I have no evidence at present to show that this is the case.

An Inquest at Reading.

Mr. COOPER asked the President of the Local Government Board whether he could now state the result of his inquiry into the action of the officials of the Reading workhouse in the case of Mrs. Emily Chapman, and what he intended to do in the matter.—Mr. BURNS furnished the following written reply: I have obtained a copy of the depositions taken at the inquest in this case and have made inquiry into the matter. It is the fact that Mrs. Chapman was admitted into the workhouse in the evening of May 20th, and was not seen by the medical officer until nine o'clock the next morning. Mrs. Chapman appears to have been seen by the police surgeon before her removal to the workhouse, and the workhouse officers did not think it necessary on her admission to send for the medical officer. She seems to have received care and attention from them, and the medical officer stated at the inquest that he could have done no good had he been sent for on the evening of the 20th. I consider, however, that whenever a case of serious illness is admitted to the workhouse the medical officer should at once be informed by the master. I have communicated this opinion to the guardians and the master has promised to act accordingly in future.

MONDAY, JUNE 14TH.

The Bulford Camp Hospital.

Mr. JOYNSON-HICKS asked the Secretary of State for War how many men had been sent to Bulford Camp hospital during the present period of training, how many had been dealt with in brigade and regimental hospital tents, and what proportion of such cases were traceable to preventable causes such as inadequate supply of tent boards and clothing.—Mr. HALDANE replied: The general officer commanding-in-chief reports that 131 cases have been admitted during the present training period to Bulford military hospital, 261 to brigade and regimental hospital tents, and 39 to the military hospital at Tidworth. As regards the cases in the East Lancashire division 40 have been dealt with in hospital tents. None of these cases are reported to be traceable to preventable causes such as inadequate supply of tent boards and clothing.

The Housing of Miners in Scotland.

Mr. BEALE asked the Lord Advocate whether the Secretary for

Scotland had made any inquiry founded on the representations made to him by a deputation of miners in January last relating to the insufficient and unsatisfactory housing accommodation for miners in certain districts in Scotland; and whether he would take steps to ensure that, in pending legislation or in the near future, adequate statutory provision should be made to deal with the evil.—Mr. URE said in reply: The Local Government Board for Scotland has requested the county medical officers of the leading mining counties of Lanark, Ayr, Stirling, and Fife to report on the housing conditions of miners in their respective districts. As soon as the information at the disposal of these officers is received the Secretary for Scotland will consider what further action is required to deal with the subject.

The Spirit Duty and Anæsthetics.

Mr. FELL asked the Chancellor of the Exchequer what was the principle upon which the increased duties were imposed on chloroform and various kinds of ether under the Finance Bill; and why any higher duty than 3*s.* 9*d.* per gallon should be levied on such spirits.—Mr. LLOYD GEORGE replied: Special duties on certain special articles, including chloroform and the various kinds of ether, had been in force for many years. They were originally fixed by reference to the estimated quantity of spirits ordinarily used in their manufacture. By the present Finance Bill the rates are raised proportionately to the increase in the spirit duty.

Mr. FELL also asked the right honourable gentleman what was the total amount of revenue which he anticipated he would raise from the new duties on chloroform, ether, and other drugs.—Mr. LLOYD GEORGE replied: I am not in a position to give any exact estimate of the revenue for the current financial year from the duties on these particular articles. The total net revenue during the last financial year was £2127.

Home Office Administration.

On the vote of £140,800 for the expenses of the Home Office,

Sir CHARLES DILKE said that the subject raised on this vote last year was that of infant mortality as affected by the employment of mothers in factories. That subject had been so fully before the public mind that he would now refer to the conditions of factory labour and the labour generally of children of tender years. During the present year there had been an extraordinary number, proportionately speaking, of inquests in which most painful facts had been revealed with regard to the employment in factories of children of about 13 years of age. The infant mortality caused by the employment of mothers was now the subject of a Government inquiry. A great deal of information was now being collected with regard to it and a good deal of progress had been made. Even now infant mortality had not been reduced in anything like the proportion of reduction of mortality generally. There were still districts like some portions of Lancashire and Staffordshire in populous towns where infant mortality was terribly high. The women factory inspectors pointed out that the evils connected with the employment of very young children were even greater than those connected with the employment of mothers as affecting infant mortality. The right honourable gentleman went on to refer to the large number of accidents to children in the mills in the cotton district, and he said that steps should be taken to exclude children of tender age from employment on the more dangerous operations.

Mr. GEORGE GREENWOOD called attention to the administration by the Home Office of the Cruelty to Animals Act, 1876, under which vivisection experiments were supposed to be regulated, especially with regard to the so-called inspection of them. There were two inspectors for Great Britain under the Act of 1876, Mr. G. D. Thane and Sir J. A. Russell, one receiving 500 guineas for his services, and the other 350 guineas. They did not give the whole of their time to the work of inspection. He had nothing to say against these gentlemen personally. The fact was that both gentlemen were pro-vivisectionists. They just dropped in with the view of having a little friendly chat with the experimenters. The honourable gentleman went on to say that it appeared to him that what was called inspection under this Act was a farce. The public had been lulled into a full sense of security, as really the vivisector did what he liked. Now, how was a licence granted for these vivisections? A man applied for a licence for vivisection to the Home Secretary. The Home Secretary referred it to the permanent officials, and in every case the application was referred to the Association for the Advancement of Medicine by Research. He contended that was a private body for the promotion of vivisection. He hoped that in the future the Home Secretary might find it possible to administer this Act a little more for the protection of the animals and a little less for the protection of vivisectors.

Mr. AKERS DOUGLAS regretted that the honourable Member for Peterborough had brought into the discussion the question of the administion of the Home Office in respect to the Acts regulating cruelty to animals, especially when a Royal Commission was inquiring into the matter. The Act, in his opinion, had been administered with great humanity. The honourable Member forgot to tell the House that very careful investigation was made into the character of those who had licences to carry out experiments on living animals by medical authority. First of all no operation could be carried out except in isolated places, and no experimenter could have a licence unless he was recommended by certain medical authorities, including the President of the Royal College of Physicians or the President of the Royal College of Surgeons. He thought, therefore, that the honourable gentleman was hardly right in saying that care was not taken in the question of selecting those to carry out these operations.

Sir WILLIAM COLLINS said that as a member of the Royal Commission on Vivisection his lips were sealed at present with regard to this matter, but he might say that the Royal Commission was now considering the very voluminous evidence which it had taken and was arranging to issue a voluminous report. He went on to refer to the provision made for dealing with cases of accidents and sudden illnesses occurring in streets and public places in the metropolis. The matter had been considered by a departmental committee and the Home Secretary had stated that he hoped that he could deal with some of the points raised by the Committee by administrative action, but that he could not deal in the present session with the larger recommendations that might involve legislation. The Committee had found the provision for dealing with street accidents and cases of sudden illness in public places in London was in a very unsatisfactory condition when a comparison was made with large provincial towns like Manchester and Liverpool. In London it appeared that owing to the present system of transport adopted for these cases of accidents or sudden illness much preventable suffering arose, and sometimes additional injury was caused to the sufferer by the mode of conveyance employed. He thought they had a right to ask the Home Secretary what action he and his department were now going to take on this question, and whether it was by organising the police into an ambulance department or by allowing some other body to take up the work. The City of London had inaugurated the most efficient ambulance system in the country, and by using telephone calls and an electrical motor ambulance it was now possible within nine minutes of the receipt of the call to have the patient in St. Bartholomew's Hospital. During the last three years the street accidents in London had increased by no less than 62 per cent.

Mr. GLADSTONE said that he recognised the importance of this subject raised by the honourable Member for West St. Pancras (Sir William Collins), and the necessity for doing something, but he was not able to forecast legislation. The Government should be glad to see the Bill which has been brought in by his honourable friend sent to a Grand Committee, which should be in a condition to consider the main point—viz., what authority should undertake the work and come to a decision on the facts. He much regretted that for reasons which were rather obvious it was impossible for the Government to make any promise of legislation on this subject this session. In reply to the right honourable gentleman (Sir C. Dilke), he said that so far as concerned the cases to which he had referred it was quite admitted that they were accidental. The poor children did what was illegal and prohibited under the Factory Acts, and unfortunately they were killed by machinery in motion. Proceedings might have been taken under the Employment of Children Act, but if there was no gross carelessness the Home Office would not have been any better by doing so. He also stated that he was not going into the question of vivisection, but he wanted to clear up one matter. He did not think that his honourable friend meant to be taken in any offensive or personal sense.

Mr. GREENWOOD: I disclaim any such thing. It was certainly not my intention. I was simply referring to the system.

Mr. GLADSTONE said that his honourable friend stated that when the inspectors went to the laboratories they would have a friendly chat with the operators and do nothing more. That did convey a very serious charge, but he did not suggest that it was intended.

Mr. GREENWOOD: I did not use a word in order to convey any offensive suggestion. I was speaking of the system.

Mr. GLADSTONE said that some people might think vivisection inhuman and others might think it in the interests of humanity. The Act was in existence and it was of no use bandying charges of inhumanity against those who were appointed to administer it. He could quite understand that his honourable friend (Mr. Greenwood) did not intend to say anything which might be construed as offensive to anybody, but it was his duty to stand up for the professional men who were serving the department and serving their country according to their own opinion and consciences, and who were faithfully discharging the duties entrusted to them. It was quite true that their whole time was not given to the work, but they were not paid for their whole time. They must have men who were competent for the work, and unless Parliament was prepared to pay a very high salary it would never get officials at the present salaries who would be able to give their whole time to the work which was being done.

Mr. HERBERT SAMUEL (Under Secretary for the Home Department), speaking at a later stage of the debate, said that matters in connexion with the subject of vivisection were being thoroughly considered by a Royal Commission, which would shortly present its report. However, in reply to the charge that the Home Secretary delegated the work of issuing vivisection certificates to the Association for the Advancement of Medicine by Research, there was no foundation for the allegation at all. The Home Office had always investigated each case by the inspectors appointed by the Home Secretary, and it was on the report of those inspectors that the Home Secretary was satisfied or not satisfied as to the suitability of the persons who applied for licences. He also stated that trachoma, when detected in alien immigrants, was regarded as a cause for their rejection under the Aliens Act.

After further discussion, the vote was agreed to.

TUESDAY, JUNE 15TH.

Favus in the Metropolis.

Mr. RUPERT GUINNESS asked the President of the Local Government Board whether he could state what number of persons were suffering from favus in the metropolitan area according to the last returns.—Mr. BURNS replied: There are no complete returns of the number of persons suffering from favus in the metropolitan area. The disease chiefly exists amongst children coming from Russia and other Eastern countries, and I find that in the year 1908, 23 children had been admitted to the special favus school of the London County Council, 28 had left, and there were 76 still on the roll.

WEDNESDAY, JUNE 16TH.

The Vaccination of Post-office Servants.

Mr. T. F. RICHARDS asked the Postmaster-General whether he was aware that the medical men attached to his department were refusing to accept persons for employment unless they could exhibit good marks of primary and secondary vaccination; and whether this was done with his sanction.—Mr. BUXTON replied: Candidates for employment in the Post-office who have a conscientious objection to revaccination are allowed exemption therefrom on making a statutory declaration to the effect that they conscientiously believe that revaccination would be prejudicial to their health. Primary vaccination is, however, necessary. There is no reason to suppose that the rules are not properly observed, but if any case thought to have been improperly dealt with is brought to my notice I will have inquiry made.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BELL, J., M.R.C.S. Eng., L.R.C.P. Lond., D.P.H. Lond., has been appointed Principal Civil Medical Officer, Hong Kong, during absence on leave of Dr. J. M. Atkinson.

BREMRIDGE, RICHARD H., B.Sc., M.B., B.Ch. Oxon., L.R.C.P. Lond., M.R.C.S., has been appointed Chief Medical Inspector of Schools for the County of Wilts.

EVANS, DAVID ROBERT POWELL, M.R.C.S., L.R.C.P. Lond., L.S.A., has been appointed Medical Officer to the North Wimbledon Cottage Hospital.

HEPBURN, MALCOLM L., M.D., B.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Central London Ophthalmic Hospital.

ISAAC, CHARLES LEONARD, M.B., M.R.C.S., has been appointed a Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 30.

JEFFREYS, W. M., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at University College Hospital.

MARTIN, BASIL W., M.B., B.Ch. Aberd., has been appointed Medical Officer to the Reading Dispensary.

PEARSON, J. SIDNEY, M.D. Cantab., has been appointed Pathologist and Registrar to the East London Hospital for Children, Shadwell.

SHERREN, JAMES, F.R.C.S. Eng., has been appointed an Examiner in Anatomy for the Primary Fellowship.

SWEETING, R. DEANE, M.D. Dub., D.P.H. Dub., has been appointed Examiner for the Conjoint Diploma in Public Health of the Royal College of Physicians and Surgeons of England.

THOMAS, WILLIAM MURRAY, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the No. 6 District of the Bodmin (Cornwall) Union.

VOSPER, S., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer to the British Lying-in Hospital.

WILLIAMS, RICHARD THOMAS, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed a Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 30.

WOODWARK, A. STANLEY, M.B., B.S. Lond., M.R.C.P., has been appointed Physician to the Casualty Department of St. Bartholomew's Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BETHLEM HOSPITAL.—Resident House Physician, unmarried, for six months. Salary £25 per quarter, with apartments, board, and washing.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL, Woodchurch-road, Birkenhead.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £170 per annum and rooms, fire, lights, and attendance.

BRECON AND RADNOR ASYLUM, Talgarth, Breconshire.—Assistant Medical Officer. Salary £170 per annum, with board, apartments, attendance, and laundry.

BRIGHTON AND HOVE HOSPITAL FOR WOMEN AND LYING-IN INSTITUTION.—Honorary Surgeon-in-Ordinary.

CAIRO, EGYPT, SCHOOL OF MEDICINE.—Professor of Anatomy. Salary £800 per annum, with pension rights.

CANTERBURY BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £140 per annum, with board, lodging, washing, and attendance.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board and lodging.

CHELTENHAM GENERAL HOSPITAL.—Surgeon-in-Charge of the Branch Dispensary. Salary £80 per annum, with board and lodging.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Junior House Surgeon. Salary £60 per annum, with board, apartments, and laundry.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, washing, and residence.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Resident Medical Officer. Salary £100 per annum, with board, residence, and laundry. Also Medical Officer and Second Medical Officer to the Casualty Department, both for six months. Salaries at rate of £100 and £40 per annum respectively with luncheon and tea.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, S.E.—House Physician for seven months. Salary at rate of £60 per annum, with board, residence, and washing. Also Clinical Assistants in the Out-patient Departments.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board, lodging, and washing.

GLOUCESTERSHIRE EDUCATION COMMITTEE.—School Medical Inspector. Salary £250 per annum, with travelling expenses.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Also Assistant House Surgeon. Salaries £100 and £50 per annum respectively, with board, residence, and laundry.

GUY'S HOSPITAL MEDICAL SCHOOL.—Douglas Research Studentship. Value £300.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, unmarried, for six months. Salary £30, with board and residence. Also Locum Tenens Bacteriologist and Pathologist. Salary £3 3s. per week.

HULL, ROYAL INFIRMARY.—Honorary Ophthalmic Surgeon.

INDIAN MEDICAL SERVICE, India Office, London.—Twenty-one Commissions.

LEEDS GENERAL INFIRMARY.—Honorary Assistant Surgeon.

LIVERPOOL INFIRMARY FOR CHILDREN.—Two Resident Medical Officers for six months. Salary in each case £30, with board and residence.

LIVERPOOL WORKHOUSE, Brownlow Hill.—Assistant Medical Officer. Salary £120 per annum, with apartments, rations, &c.

LONDON COUNTY COUNCIL.—Twenty-six Assistant School Doctors Salary £120 per annum.

MANCHESTER, UNIVERSITY OF.—Junior Demonstrator in Physiology. Salary £100 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Junior Resident Medical Officer at Hampstead. Salary £50 per annum, with board and residence. Also Assistant Resident Medical Officer at Northwood. Salary £50 per annum, with board and residence.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Third Resident Medical Officer. Salary £80 per annum, with board, residence, and laundry.

OLDHAM INFIRMARY.—Senior House Surgeon. Salary £120 per annum, with residence, board, and washing.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Junior Obstetric Assistant (female) for six months.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand, W.C.—Assistant Surgeon.

ST. GEORGE'S HOSPITAL, S.W.—Assistant Ophthalmic Surgeon.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN.—Honorary Assistant Physician.

ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, Cavendish-square, W.—Honorary Physician.

SEAMEN'S HOSPITAL SOCIETY.—Pathologist. Salary £100 per annum, with board.

SHEFFIELD UNION HOSPITAL, Firvale.—Resident Assistant Medical Officer, unmarried. Salary £100 per annum, with apartments, rations, &c.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician for six months. Salary at rate of £100 per annum, with rooms, board, and washing.

SWITZERLAND, QUEEN ALEXANDRA SANATORIUM, Davos Platz.—Resident Medical Superintendent, unmarried. Salary £200 per annum, with board and residence.

UNIVERSITY COLLEGE HOSPITAL, Gower-street, W.C.—Assistant Surgeon.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician for six months. Salary £30, with board, lodging, and laundry.

WALSALL AND DISTRICT HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with board, residence, &c.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon, unmarried. Salary £75 per annum, with board, residence, and washing.

WEST LONDON HOSPITAL AND POST-GRADUATE COLLEGE, Hammersmith-road, W.—Clinical Assistants. Also Three Casualty Officers.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Resident Obstetric Assistant for six months. Board and lodging provided.

WESTON SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician, unmarried. Salary £65 per annum, with board, residence, &c. Also Locum Tenens House Physician. Salary 4 guineas per week.

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £80 per annum, with apartments, board, and laundry.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Two House Surgeons. Salary £80 per annum, with board, lodging, and laundry.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Fakenham, in the county of Norfolk; and at Bishopstoke, in the county of Hants.

THE Secretary of State for the Home Department gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 2, to be attached more particularly to Sunderland and Seaham Harbour County Courts.

Births, Marriages, and Deaths.

BIRTHS.

BARWELL.—On June 14th, at Mildenhall, Suffolk, the wife of Francis R. Barwell, M.R.C.S., L.R.C.P., of a son.

GORDON-GREEN.—On June 13th, at St. David's, 52, Whitwell-road, Southsea, Hants, the wife of Fleet-Surgeon H. W. Gordon-Green, R.N., M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

JEWESBURY.—On June 10th, at Stoughton, Guildford, the wife of R. C. Jewesbury, M.B. Oxon., M.R.C.P. Lond., of a son.

MARRIAGES.

ADDISON—BROWN.—On June 18th, at St. Marylebone Parish Church, York Gate, Regent's Park, by the Rev. W. D. Morrison, Oswald Lacy Addison, F.R.C.S., of 55A, Welbeck-street, W., son of Joseph Addison, of 20, Harley House, Regent's Park, and Bond Court, Walbrook, E.C., and Kate (Cissie) Brown, M.B., B.S. Lond., daughter of Harold Brown, of 9, Chester-terrace, Regent's Park, and Bond Court, Walbrook, E.C.

MACNAB—HEWLETT.—On June 12th, at St. Paul's Church, Beckenham, by the Rev. Canon Hammond, John Theodore Macnab, M.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., of Cambridge House, Balham, son of the late Robert W. Macnab, Esq., of Dalbeattie, to Gladys Violet, fourth daughter of John C. Hewlett, Esq., J.P., of Hillside House, Beckenham, Kent, and Charlotte-street, London, E.C.

MORRIS—O'FLANAGAN.—On June 15th, at St. Peter's, Cranley-gardens, South Kensington, Cyril Clarke Boville Morris, A.M.I.Mech.E., Assistant Divisional Officer of the London Fire Brigade, eldest son of Clarke Morris, M.R.C.S., J.P., Blackheath, to Anita, only daughter of Mrs. O'Flanagan, 39, Drayton-gardens, W.

DEATHS.

METCALFE.—On June 11th, at Beccles, Suffolk, Robert Ives Metcalfe, M.D., in his 75th year.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

DENTAL CARIES AND FLOUR.

Mr. T. G. Read, D.M.D. Harvard, has been writing to us and to the press generally, we believe, on the relation of bread to the increase of dental caries. Mr. Read's view is that the increase of dental caries is to be attributed to the alteration of the method of preparing flour. The increase of caries is a question of international interest, and one naturally welcomes any facts which have a bearing upon the solution of the problem. The idea put forward by Mr. Read about roller-milled flour is not altogether new, and it is quite possible that the method of milling of the present day by means of rollers does alter the constitution of bread and make it more rapidly fermentable. Mr. Read's experiments on the amount of acidity produced by bread made with roller-milled and stone-milled flour have a certain interest. They are as follows:—

> He says: "In 1900 I investigated the matter of bread and dental caries, and discovered that there is an increase of about 40 per cent. during mastication in the acidity of bread produced from roller flour, whereas there is no such increase when the bread is composed of stone-milled flour. These results were confirmed in 1901 by analytical chemists of experience.
>
> Further, I placed in an incubator, at the temperature of the mouth, sound teeth embedded in chewed bread made from roller flour and stone-milled flour. Now, the teeth embedded in the bread made from old-fashioned stone-milled flour decayed but slowly, whereas those embedded in the bread made from rolled flour decayed rapidly. It appears that if we return to eating bread made from stone-milled flour there will be no need for the ratepayers to provide dental attention for school-children, as if the children did not eat bread made from roller flour automatically the increase in dental caries would cease."

The experiment recorded by him in his letter is suggestive, and it is to be hoped that he will carry his work forward and try if possible to eliminate all sources of error. If we could feel quite certain that teeth treated in the manner he suggests decay more rapidly with roller-milled than stone-milled flour an advance would certainly have been gained. We are not inclined to think that the increase of dental caries can be put down to this or that special class of foodstuff, and it is much more reasonable to think that the cause really lies in some condition affecting the whole of the carbohydrates that form part of the diet of to-day, and it has been suggested that the trouble in all probability lies in the fact that the carbohydrates of to-day are much more fermentable than they were in days gone by.

THE COURT PHYSICIANS OF EGYPT AND ROME.

THE monumental work, the "Histoire des Lagides," by M. Bouché Leclercq, which by utilising the great discoveries of papyrus manuscripts for the first time provides a complete picture of Egyptian times under the Hellenic dominion, gives as a title of one of the important court functionaries the King's Physician, or *βασιλικὸς ἰατρὸς-αρχίατρος*.

This statement carries back the medical Archiatri from the Roman to the Greek epoch, thus reversing the previous pronouncement of classical scholars that the first official known as an "Archiater" was Andromachus of Crete, physician to the Emperor Nero, a man famous for his elegiac poem preserving the curious compound medical recipe, or antidote, known as the "Theriaca Andromachi."

M. Bouché Leclercq does not note from what document, or record, he has quoted the title, but there is other evidence proving the existence of an official royal physician under the successors of Alexander, known as an Archiatrus. The most decisive of these records is an inscription found in the island of Delos, published by M. Salomon Reinach of Paris. This text refers to a certain Papias of Amisos as Archiatrus to Mithridates. Another record, also upon stone and found at Delos, mentions a medical man who is called Archiatrus of King Antiochus, and so dates from the second century B.C.

The title was first used under the Ptolemies in Egypt and not by the Seleucidæ in Syria because the old Pharaohs from the time of the fifth dynasty, and probably long before that remote period, had a physician-in-chief attached to them, and so there was in Egypt a hierarchy of medicine of which the Court official was the superior.

The Archiatrus was essentially a confidant of the King, and therefore sometimes invested with other important offices. Thus another inscription from Delos rescues from oblivion a Greek from Alexandria who was chief of the physicians of one of the Ptolemies, *ἐπὶ τῶν ἰατρῶν*, but who fulfilled other functions, one of them being that of the director of the museum. A papyrus at Turin mentions a certain Tatas whom it calls *βασιλικὸς ἰατρός*, who promulgates an ordinance emanating from his sovereign, so that he appears sometimes to have acted as a sort of Secretary of State. Aristæus, an author to whom is ascribed a history of the translation of the Hebrew Scriptures into Greek (commonly called the Septuagint), a translation undertaken by desire of Ptolemy Philadelphus in 270 B.C., mentions Ptolemy's Archiatrus, who may well have been connected with the library, because in arranging for the translation of the Hebrew Scriptures he was engaged in a literary congress of Hebrew and Greek scholars. At least one Egyptian papyrus and many newly discovered inscriptions refer to Archiatri of the Roman era.

A FALSE MEDICAL CERTIFICATE IN BERLIN.

A GERMAN medical man has been criminally prosecuted for giving a false certificate. At the urgent request of his patient, a telephone girl, whom he had attended in her confinement and who declared she would lose her situation if the true cause of her absence from duty were revealed, he at last took pity on her and foolishly consented to certify that she was suffering from influenza and that she would be unable to return to duty for at least eight days. In favour of the accused it was urged that the medical certificate was quite true as to the fact for which it was required—that is, that the girl was too ill to attend to her duty, but the court passed the lowest permissible sentences, viz., one month's imprisonment on the medical man and one day's imprisonment on the girl, but expressed its opinion that circumstances were hard on the practitioner and hinted that perhaps his punishment might be reduced as an act of grace.

A CRUSADE AGAINST FLIES.

To the Editor of THE LANCET.

SIR,—Last summer we had quite a swarm of house flies in my house, and they appear to be coming again now. Can you suggest something which will destroy them? If so I should be extremely grateful.

I am, Sir, yours faithfully,

June 14th, 1909. H. K.

*** Our correspondent will find full instructions for using formalin (a solution of formaldehyde) for the destruction of flies in THE LANCET of May 22nd, p. 1472, and May 29th, p. 1578, under the heading "A Crusade against Flies."—ED. L.

OILY INJECTIONS OF BINIODIDE OF MERCURY.

AT the present time preparations of biniodide of mercury dissolved in oil are being used widely in the treatment of syphilis. There are some proprietary articles on the market which are claimed to contain 1 per cent. of the mercuric salt, but quite recently it has been shown by Dr. Reid Hunt and Dr. Atherton Seidell in the *Journal of the American Medical Association* that one of these contains less than one part of mercuric iodide in 10,000, and that at ordinary temperatures liquid paraffin holds less than 0·03 per cent. of the salt in solution. In a recent number of the *Répertoire de Pharmacie* Dr. P. Lemaire has given processes for preparing oily solutions of mercuric iodide in various strengths up to 1·5 per cent. He takes advantage of the fact that whereas 100 cubic centimetres of olive oil dissolve and retain in solution only 0·45 gramme of the salt castor oil dissolves 1·9 grammes. He gives the following formula for preparing a stable 1 per cent. solution: mercuric iodide, one gramme; castor oil, 50 cubic centimetres; guaiacol, three grammes; olive oil sufficient to make 100 cubic centimetres. The oils are previously sterilised and cooled and care is taken at each stage of the process to avoid contamination. The olive oil is washed with alcohol before sterilisation. The mercuric iodide readily dissolves in the castor oil when heated on a water bath at 70° C. This solution has given very satisfactory results in clinical practice during the past six years. Scarcely any pain is produced by the injections, and they have not been followed by general intolerance, diarrhœa, stomatitis, scars, abscesses, or marked swelling. In some cases nodosities have been produced, but they were of only slight importance. If a stronger preparation is desired it is possible to produce a solution containing 1·5 per cent. of mercuric iodide by using equal parts of nut oil and castor oil, although it is better to use a slight excess of the latter. One cubic centimetre of this solution, injected daily for from 20 to 25 days, exerts an energetic curative action, but it sometimes causes pain. Still more concentrated preparations are obtainable by mixing the mercuric iodide with well-dried potassium iodide before dissolving the salt in the oil. It is doubtful, however, if the addition of an alkaline iodide is beneficial, since the presence of even a trace of moisture causes a precipitation of the mercuric iodide, and this rapid dissociation may play an important part when the injection comes in contact with the tissues of the body containing from 74 to 78 per cent. of water. It is quite possible that the tolerance and elimination of the injection are prejudicially affected by the addition of potassium iodide.

GIBRALTAR AND ALGECIRAS.

Sir F. Evans, Colonial Secretary of Gibraltar, reporting on the Blue-book of the colony for 1908, gives the present estimated population (including 5127 military) at 23,443—i.e., 12,949 males and 10,494 females. The death-rate for the year was 16·8 per 1000. The number of patients treated in the Colonial Hospital was 531, or 160 less than in 1907. There were only three admissions to the Small-pox Hospital. The general health was good. With the excellent hotel accommodation provided at Algeciras, a Spanish town on the coast immediately opposite to Gibraltar, and at Gibraltar itself, the number of visitors to the latter port has largely increased of late years. Passengers land in great numbers throughout the year from the large ocean-going steamers which call regularly and with great frequency. While there are many persons who spend only a few hours on the Rock in passing, there are others who, to escape the rigorous winter in more northern parts, or recognising Gibraltar and Algeciras as capital centres from which to make tours into Spain and visits to Morocco, remain

temporarily at the hotels. Between Algeciras and Gibraltar there is steam ferry communication at short intervals during each day. This greatly assists communication between the two places. Mr. W James, British Vice-Consul at Algeciras, writes to the Foreign Office as follows: "Visitors to this town and to the South of Spain, viâ the Algeciras Railway, are ever on the increase; 58,601 passengers travelled into Spain by train from here during 1908, and the local hotels have been quite full during the season. Undoubtedly Algeciras increases in favour as a health resort year by year, and the general consensus of opinion among visitors is that if only something were done by the Government and local authorities to make the place more attractive the coast of Algeciras Bay would soon become a Spanish Riviera. Algeciras was visited during the year by the King of Spain. It is the first time for over 200 years that the Campo de Gibraltar has been visited by a Spanish monarch. It is rumoured that His Majesty was much struck by the possibilities of Algeciras as a winter resort, and he was graciously pleased to promise a deputation which waited upon him that he would use his influence with the Government to have the condition of the roads improved and their number increased. Up to the present the season has commenced in January and extended to the end of April, but, as a matter of fact, this is the rainy and most unpleasant part of the winter here, and the only cold time in the year is in January and February, when the cold from the surrounding snow-covered hills is very severe. In November and December and the beginning of January the temperature is mild, bright, and dry, and it is a pity visitors do not choose November as the time for coming here. The difference of climate between this place and Gibraltar, across the bay, is quite extraordinary, and even the rainfall differs. In 1908, for instance, it was 30·08 inches in Algeciras and 27·48 inches in Gibraltar. The British residents in Algeciras number about 196."

LYNN THOMAS AND SKYRME FUND.

THE following additional subscription to the fund has been received: D. C. Lloyd-Owen (Birmingham), £1 1s.

A. J. D.—No definite rule can be laid down, and there is no question of correctness. It is a matter of courtesy that one medical man should treat another medical man or his family while they are dependent on their father without a fee, but the custom must be regulated by circumstances. For instance, if a medical man is wealthy, or has retired from practice with a sufficiency, there is no reason why he should not pay one of his brethren for medical advice for himself or his family.

Dr. J. Foster Vince.—The name of the medical man about whom our correspondent writes appears in the American Medical Directory for 1906. We have no information other than what we have seen in newspaper cuttings similar to the one enclosed, but we advise our correspondent to urge his patient not to waste her money on a remedy the nature of which is unknown.

R. C.—An analysis of Hollands gin appeared in THE LANCET of July 25th, 1908, p. 243, and attention was directed to its diuretic action.

First Aid.—Permission to give lectures on any subject at a private school rests with the proprietor or proprietors of such school.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

MEDICAL SECTION (Hon. Secretaries—Herbert P. Hawkins, A. M. Gossage): at 5.30 P.M.

Paper:

Dr. G. A. Sutherland: Gastro-intestinal Crises from Effusion into the Bowel Wall.

THURSDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—Hugh Lett, E. I. Spriggs, Harold J. Stiles).

Wightman Lecture:

Dr. George Carpenter: Congenital Heart Affections.

NEUROLOGICAL SECTION (Hon. Secretaries—Leonard G. Guthrie, E. Farquhar Buzzard): at 8.30 P.M.

Dr. James Collier and Dr. Gordon Holmes: Amyotonia Congenita: (1) The Pathological Findings in a Case previously shown before the Section; (2) Demonstration of a Further Case with the results of a Biopsy.

Dr. Albert Wilson: A Critical Description of the Brain of a Degenerate (a Convict and a Murderer).

N.B.—Fellows of the Society are entitled to attend and to speak at all Meetings.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, Kensington Town-hall.

FRIDAY.—8.15 P.M., Sir Victor Horsley: The Cerebellum. (Cavendish Lecture.)

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY AND THURSDAY.—5 P.M., Dr. W. S. Lazarus-Barlow: Radioactivity and Carcinoma (an Experimental Enquiry). (Croonian Lectures.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

FRIDAY.—5 P.M., Dr. G. H. Smith: The Evolution of the Bra in (Arris and Gale Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. J. Pringle: Clinique (Skin). 5.15 P.M., Lecture:—Dr. H. Campbell: Treatment of Asthma.

TUESDAY.—4 P.M., Dr. H. Campbell: Clinique (Medical). 5.15 P.M., Lecture:—Dr. T. D. Lister: Infantile Scurvy.

WEDNESDAY.—4 P.M., Mr. L. Mummery: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. A. E. Giles: The Diagnosis of Pelvic Tumours.

THURSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. T. Hyslop: Paralysis and Insanity.

FRIDAY.—4 P.M., Dr. StClair Thomson: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture:—Mr. Bidwell: Practical Surgery.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Bidwell: Surgical Treatment of Acute General Peritonitis.

WEDNESDAY.—10 A.M., Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Harman: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Medicine.

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture:—Dr. Cole: The Insane and the Law.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. Lecture:—Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Lloyd: Anæsthetics.

SATURDAY.—10 A.M., Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. Mr. Harman: Diseases of the Eyes. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson); X Rays. 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations (Mr. Carson). Clinics:—Surgical Out-patient (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles). 4.30 P.M., Demonstration:—Dr. J. E. Squire: Cases of Early Tuberculosis of the Lungs at the Northwood Sanatorium.

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. H. W. Carson); X Rays. 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Cinematograph Demonstration: Dr. A. J. Whiting: Neurological Cases.

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Operations (Mr. W. Edmunds). Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Sir Dyce Duckworth: Medicine. 3.15 P.M., Mr. Turner: Surgery. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 2.15 P.M., Special Lecture:—Dr. F. Taylor: Relapsing Fever.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture:—Mr. McGavin: Congenital Malposition of the Testis.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. T. G. Stewart; Nervous Manifestation at the Menopause.
FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. T. G. Stewart: Spinal Tumours.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture:—Mr. Stuart-Low: Accessory Sinuses.
FRIDAY.—3.45 P.M., Lecture:—Mr. Stuart-Low: Accessory Sinuses.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W.

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.
TUESDAY.—5 P.M., Clinical Demonstration: Dr. J. Mackenzie.
WEDNESDAY.—3 P.M., Clinical Demonstration: Dr. F. Palmer.
THURSDAY.—3 P.M., Clinical Demonstration: Dr. T. D. Savill.
FRIDAY.—2 P.M., Clinical Demonstration: Dr. P. Stewart. 5.30 P.M., Clinical Demonstration: Dr. E. Macnamara.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.).

TUESDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (23rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (24th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (26th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 17th, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
June 11	29·94	N.	0·05	91	55	46	46	49	Cloudy
" 12	29·97	N.	0·05	91	55	45	48	51	Cloudy
" 13	30·14	N.W.	0·65	113	67	49	50	56	Cloudy
" 14	30·25	S.	...	118	68	49	51	56	Hazy
" 15	30·23	N.E.	...	103	61	50	49	53	Cloudy
" 16	30·20	N.E.	...	105	67	51	51	55	Overcast
" 17	30·23	N.E.	...	104	63	51	51	53	Overcast

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